^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev, S. Juutinen, D. J. Hartley	NDS 150, 1 (2018)	1-Feb-2018

2016Be02: Two independent experiments were performed for γ-ray singles and γγ-coincidence measurements, respectively. The results for γγ-coin have been reported earlier in 2010Ba48. In the singles measurements, thermal neutrons were produced from the high-flux reactor at the Institute Laue-Langevin, Grenoble, incident on 50 mg enriched metal rhenium (97.5% in ^{187}Re) on an Al foil. γ rays were detected with the high-precision double-crystal Bragg spectrometer GAMS5 equipped with two curved Si crystals (energy resolution ΔE/E=3.15×10^{-6}×E keV). Measured Eγ, Iγ. Deduced levels, J, π, γ-ray branching ratios.

2010Ba48: The thermal neutrons were produced by the light-water nuclear reactor LWR-15 in Rez, Czech Republic. A 500 mg sample of 97.5% enriched ^{187}Re target was used. γ rays were detected using two HPGe detectors. Measured: Eγ, Iγ, γ-γ coin. Deduced: levels, J^{π}. Others (by the same group): 2009BaZS and 2015BaZX.

1972Sh13: γ, γγ, γγ(t) measurements. For high-energy range (4888 to 5872) Ge(Li) pair spectrometer and for low-energy range (46 to 829) curved-crystal spectrometer was used.

1968Su01: ce data for intense low-energy transitions. Magnetic spectrometer was used.

1978Sc10: γγ(t) measurements using combination of scintillation and Ge(Li) detectors.

Others: 1978Sc10, 1969HoZY, 1967Pr08, 1967Pr07, 1966Be03, 1963Sc05.

Relative population of g.s. and the 18.6-min isomer in (n,γ) reaction is reported by 2006Le11, 1978Ar22 and 1964Gu08.

^{188}Re Levels

The level scheme is based on γ-ray singles and γγ coin data of 2010Ba48 and 2016Be02, unless otherwise stated. The assigned in 1972Sh13 $K^{\pi}=4^-$ and 1^- structures associated with the π5/2[402]⊗ν3/2[501] configurations were not confirmed in 2010Ba48 and 2016Be02. There are differences between the proposed $K^{\pi}=1^+$, π9/2[514]⊗ν7/2[503] structures in 1972Sh13 and 2010Ba48, and 2016Be02.

E(level)[†]	J^{π}[‡]	$T_{1/2}$[#]	Comments
0.0[@&]	1^-[@]		
63.5867[@&] *10*	2^-[@]		
156.0489[@&] *17*	3^-[@]		
169.4398[@h] *11*	3^-[@]		
172.0758 *24*	6^-	18.59 min *4*	configuration: $K^{\pi}=6^-$,π5/2[402]⊗ν7/2[503]. $T_{1/2}$: From Adopted Levels.
182.7504[@i] *24*	4^-[@]	20.3 ns *18*	$T_{1/2}$: Other: 17.6 ns *30* (1972Sh13).
205.3451[@d] *11*	2^-[@]	3.6 ns *3*	$T_{1/2}$: Weighted average of 3.7 ns *3* (1978Sc10) and 3.2 ns *6* (1972Sh13).
207.8480[j] *10*	0^+	3.68 ns *18*	$T_{1/2}$: Weighted average of 3.8 ns *2* (1978Sc10) and 3.2 ns *4* (1972Sh13).
230.9123[@l] *12*	3^+[@]	21.2 ns *12*	$T_{1/2}$: Weighted average of 21.4 ns *15* (1978Sc10) and 20.9 ns *20* (1972Sh13).
256.9238[@e] *14*	2^-[@]	<0.2 ns	
287.1240[@&] *19*	4^-[@]		
290.6611[@a] *10*	1^-[@]	<0.2 ns	
300.2047[@j] *17*	2^+[@]	1.5 ns *2*	
316.9282[@d] *14*	3^-[@]		
325.8670[@h] *16*	4^-[@]		
339.947[i] *3*	5^-		
342.5857[@l] *15*	4^+[@]		
353.5723[@j] *14*	1^+[@]		
360.8869[o] *22*	5^+	5.5 ns *6*	$T_{1/2}$: Weighted average of 5.5 ns 6 (1978Sc10) and 6.0 ns *25* and 5.2 ns *10* (1972Sh13).
362.721[@a] *4*	2^-[@]		
372.0724[@e] *17*	3^-[@]		

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^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

^{188}Re Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[#]	Comments
391.37 *5*	(5,6)$^+$		
439.7533[@m] *25*	3$^+$[@]		
446.341[&] *4*	5$^-$		
462.0788[@d] *20*	4$^-$[@]		
470.144[@a] *4*	3$^-$[@]		
482.1384[@k] *17*	2$^+$[@]	0.26 ns *10*	
483.5509 *23*	5$^+$		
493.707[n] *3*	4$^+$		
499.7354[@j] *21*	3$^+$[@]		
511.715[@j] *4*	4$^+$[@]		
516.237[h] *4*	5$^-$		
523.0435[@e] *25*	4$^-$[@]		
550.837 *5*	(4,5)$^+$		
554.322[@m] *23*	4$^+$[@]		J$^{\pi}$: Band assignment in 2010Ba48 and 2016Be02.
558.231[@] *4*	4$^-$[@]		
575.719[@k] *4*	3$^+$[@]		J$^{\pi}$: Band assignment in 2010Ba48 and 2016Be02.
582.149[@b] *4*	1$^-$[@]	<0.2 ns	configuration: π5/2[402]$\otimes\nu$3/2[501] mixed with the γ band is suggested in 1972Sh13.
608.881[@a] *4*	4$^-$[@]		
608.999[c] *6*	1$^-$		
611.624 *15*	(0,1)$^-$		
628.849[@f] *6*	2$^-$[@]		J$^{\pi}$: Band assignment in 2010Ba48 and 2016Be02.
641.049[d] *11*	5$^-$		
644.98 *3*	1$^-$		
647.296[@b] *5*	2$^-$[@]		configuration: π5/2[402]$\otimes\nu$3/2[501] mixed with γ band is suggested in 1972Sh13.
654.785[n] *5*	5$^+$		
656.827 *12*	(3,4)$^+$		
680.113[@c] *15*	2$^-$[@]		
695.552 *24*	5$^+$		
701.397 *7*	(0,1)$^-$		
703.451[k] *5*	4$^+$		J$^{\pi}$: Band assignment in 2010Ba48 and 2016Be02.
704.04[@g] *8*	2$^-$[@]		J$^{\pi}$: Band assignment in 2010Ba48 and 2016Be02.
708.683[e] *6*	5$^-$		
719.633 *10*	(4,5)$^+$		
723.177[@] *12*	2$^-$[@]		
734.902 *17*	(1,2)$^-$		
737.021[@f] *8*	3$^-$[@]		
739.20 *4*	6$^-$		
739.807 *9*	(4,5)$^-$		
745.21[@] *15*	(3,4)$^-$[@]		
748.121 *21*	(2,3)$^-$		
750.062 *11*	(3,4,5)$^+$		
754.585[@] *6*	(3,4)$^-$[@]		
756.590 *21*	(1,2)$^+$		
781.890[a] *7*	5$^-$		
782.794[@c] *9*	3$^-$[@]		J$^{\pi}$: Band assignment in 2010Ba48 and 2016Be02.
791.514[@] *23*	(2,3)$^-$[@]		
798.25[@g] *9*	3$^-$[@]		J$^{\pi}$: Band assignment in 2010Ba48 and 2016Be02.
799.544[j] *14*	5$^+$		J$^{\pi}$: Band assignment in 2010Ba48 and 2016Be02.

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^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

^{188}Re Levels (continued)

E(level)†	Jπ‡	E(level)†	Jπ‡
800.440 *19*	$(2,3)^-$	1049.15 *21*	$(2,3)^-$
807.628@ *11*	$(1,2)^+$@	1061.90 *16*	$(2,3)^-$
810.527 *12*	$(3,4)^+$	1063.33 *6*	$(3,4)^+$
812.99 *3*	$(1,2)^-$	1070.57 *6*	$(2,3)^+$
817.679 *13*	$(2,3)^+$	1075.60 *9*	$(3,4)^+$
822.803@ *19*	$(1,2)^-$@	1082.00 *7*	$(2,3)^-$
831.826@ *18*	2^-@	1083.63 *8*	$(3,4)^+$
851.87@ *3*	$(3,4)^-$@	1086.54 *5*	$(4)^-$
854.357 *19*	$(4,5)^+$	1088.546 *24*	$(2,3,4)^-$
859.224@ *23*	$(2,3)^-$@	1093.517 *21*	$(2,3)^-$
868.352 *19*	$(2,3)^-$	1097.22 *13*	$(2,3,4)^-$
871.445@ *24*	$(2,3)^-$@	1099.28 *9*	$(3,4)^+$
874.414 *11*	$(4,5)^+$	1106.26 *5*	$(3,4)^-$
883.83@ *5*	$(2,3)^-$@	1108.62 *13*	$(3,4)^-$
884.52 *8*	$(3,4)^-$	1117.10 *5*	$(1,2)^-$
890.225 *17*	$(3,4)^+$	1118.92 *3*	$(3,4)^+$
896.192 *19*	$(2,3)^+$	1122.09 *18*	$(3,4)^-$
897.26@ *4*	$(2,3)^-$@	1124.06 *9*	$(2,3)^-$
899.341 *13*	$(3,4)^-$	1137.41 *3*	$(3,4)^+$
900.211 *15*	$(4,5)^+$	1138.51 *6*	$(3,4)^-$
910.980 *13*	$(2,3)^-$	1143.73 *24*	$(3,4)^-$
913.816@ *15*	$(2,3)^+$@	1146.01 *9*	$(0,1)^+$
914.23 *12*	$(2,3)^-$	1146.7 *3*	$(2)^-$
916.24 *4*	$(3,4)^-$	1157.796 *21*	$(1,2)^-$
924.10 *5*	$(2,3)^-$	1165.62 *7*	$(1,2)^-$
924.40 *8*	$(2,3)^+$	1166.78 *10*	$(2,3,4)^-$
925.19 *4*	$(2,3,4)^-$	1183.04 *11*	$(3,4)^-$
932.41 *13*	$(4,5)^+$	1188.32 *8*	$(4)^-$
932.69 *5*	$(2,3)^-$	1204.74 *15*	$(3,4)^-$
944.25@ *8*	$(1,2)^-$@	1207.95 *3*	$(2,3)^-$
945.78 *5*	$(2,3)^+$	1208.85 *5*	$(4,5)^-$
955.69@ *4*	$(3,4)^-$@	1217.33 *9*	$(1,2,3)^+$
963.23 *4*	$(4,5)^+$	1217.99 *16*	$(3,4)^-$
965.21 *7*	$(3,4)^-$	1224.30 *9*	$(3,4)^-$
977.10 *4*	$(2,3)^+$	1226.51 *7*	$(1,2)^+$
978.22@ *14*	$(2,3)^-$@	1226.59 *11*	$(3,4)^-$
983.48@ *4*	$(3,4)^-$@	1232.28 *11*	$(2,3)^-$
986.62 *3*	$(3,4)^+$	1242.33 *15*	$(3,4)^-$
994.026 *19*	$(3,4)^+$	1247.10 *10*	$(3,4)^+$
997.09 *7*	$(3,4)^+$	1249.81 *20*	$(2,3)^-$
1000.37 *5*	$(2,3)^-$	1252.73 *15*	$(2,3,4)^+$
1001.44 *3*	$(2,3)^+$	1255.26 *15*	$(2,3)^-$
1002.486 *25*	$(2,3)^+$	1258.11 *6*	$(1)^+$
1009.3 *3*	$(1,2)^-$	1261.52 *4*	$(2,3)^-$
1011.19 *5*	$(2,3,4)^-$	1301.26 *10*	$(3,4)^-$
1012.96 *6*	$(4)^-$	1326.22 *20*	$(3,4)^-$
1013.41 *3*	$(2,3)^+$	1341.82 *10*	$(3,4)^+$
1025.994 *18*	$(3,4)^+$	1345.54 *13*	$(3,4)^-$
1026.22 *7*	$(2,3)^-$	1433.56 *16*	$(2,3)^-$
1034.51 *11*	$(1,2)^-$	1448.17 *12*	$(3,4)^-$
1035.37 *8*	$(3,4)^-$	1464.4 *4*	$(2,3)^-$
1039.04 *7*	$(3,4)^-$	1513.73 *24*	$(2,3)^+$

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^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

^{188}Re Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	Comments
1557.45 *18*	(2,3)$^{+}$	
1584.39 *16*	(2,3)$^{-}$	
(5871.65 *4*)	2^{+},3^{+}	Additional information 1. E(level): From 2017Wa10. J$^{\pi}$: s-wave capture on ^{187}Re g.s. ($J^{\pi}=5/2^{+}$).

[†] From least-squares fit to Eγ's.
[‡] From 2016Be02, unless otherwise stated.
[#] From $\gamma\gamma$(t) measurements of 1978Sc10, unless otherwise stated.
[@] Fed by primary γ-ray transition from the $J^{\pi}=2^{+},3^{+}$ capture state.
[&] Band(A): K$^{\pi}=1^{-}$, π5/2[402]$\otimes\nu$3/2[512].
[a] Band(B): K$^{\pi}=1^{-}$, π5/2[402]$\otimes\nu$7/2[503].
[b] Band(C): K$^{\pi}=1^{-}$, π1/2[400]$\otimes\nu$3/2[512].
[c] Band(D): K$^{\pi}=1^{-}$, π9/2[514]$\otimes\nu$11/2[615]. The assignment is tentative.
[d] Band(E): K$^{\pi}=2^{-}$, π5/2[402]$\otimes\nu$9/2[505].
[e] Band(F): K$^{\pi}=2^{-}$, π5/2[402]$\otimes\nu$1/2[510].
[f] Band(G): K$^{\pi}=2^{-}$, π1/2[400]$\otimes\nu$3/2[512].
[g] Band(H): K$^{\pi}=2^{-}$.
[h] Band(I): K$^{\pi}=3^{-}$, π5/2[402]$\otimes\nu$1/2[510].
[i] Band(J): K$^{\pi}=4^{-}$, π5/2[402]$\otimes\nu$3/2[512].
[j] Band(K): K$^{\pi}=0^{+}$, π9/2[514]$\otimes\nu$9/2[505].
[k] Band(L): K$^{\pi}=1^{+}$, π9/2[514]$\otimes\nu$7/2[503].
[l] Band(M): K$^{\pi}=3^{+}$, π9/2[514]$\otimes\nu$3/2[512].
[m] Band(N): K$^{\pi}=3^{+}$, π5/2[402]$\otimes\nu$11/2[615].
[n] Band(O): K$^{\pi}=4^{+}$, π9/2[514]$\otimes\nu$1/2[510].
[o] Band(P): K$^{\pi}=5^{+}$, π9/2[514]$\otimes\nu$1/2[510].

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	δ[d]	α[†]	Comments
(2.625 *16*)		611.624	$(0,1)^-$	608.999	1^-				E_γ: From level energy differences.
(2.636 *3*)		172.0758	6^-	169.4398	3^-	(M3)			E_γ: From level energy differences. Mult.: From adopted gammas.
(11.980 *5*)		511.715	4^+	499.7354	3^+				E_γ: From level energy differences.
(13.311 *3*)		182.7504	4^-	169.4398	3^-				E_γ: From level energy differences.
(13.3900 *20*)		169.4398	3^-	156.0489	3^-				E_γ: From level energy differences.
(16.026 *3*)		172.0758	6^-	156.0489	3^-	M3			E_γ: From level energy differences. Mult.: From adopted gammas.
(26.701 *3*)		182.7504	4^-	156.0489	3^-				E_γ: From level energy differences.
(29.475 *16*)		611.624	$(0,1)^-$	582.149	1^-				E_γ: From level energy differences.
(30.45 *5*)		391.37	$(5,6)^+$	360.8869	5^+				E_γ: From level energy differences.
[x]30.60	≈0.2					M1+E2			E_γ: reported by 1968Su01 only. Mult.: α(L1)exp+α(L2)exp=31 *16*, α(L3)exp=10 *5*.
(35.9053 *11*)		205.3451	2^-	169.4398	3^-				E_γ: From level energy differences.
46.692[#&] *8*	0.073[#] *15*	628.849	2^-	582.149	1^-	M1(+E2)			Mult.: α(L1)exp+α(L2)exp=17 *14*, α(L3)exp=3.8 *28* (1968Su01).
53.439[#&] *12*	0.019[#] *6*	353.5723	1^+	300.2047	2^+				
61.1[b] *3*	1.12[b] *11*	230.9123	3^+	169.4398	3^-				E_γ: Coincides with Re K_α line.
63.583[#] *3*	8.9[#] *13*	63.5867	2^-	0.0	1^-	M1+E2	0.061 *23*	3.42 *10*	E_γ: Other: 63.581 keV *3* (1963Sc05). Mult.: From L1:L2:L3:M:N=35.5:4.1:1.1:1.1:9.5:2.8 and corresponding conversion electron coefficients (1968Su01). δ: From subshell ratios and α(L)exp=2.7 5 (1964Ta07).
65.137[#&] *18*	0.194[#] *19*	647.296	2^-	582.149	1^-				
[x]68.037[#] *18*	0.137[#] *14*								
72.060[#] *20*	0.44[#] *4*	362.721	2^-	290.6611	1^-				E_γ: Placed in the level scheme by 1972Sh13, but not observed in 2010Ba48 and 2016Be02.
74.864[#] *3*	1.41[#] *14*	230.9123	3^+	156.0489	3^-	(E1)		0.794	E_γ: Other: 74.86 *8* (2016Be02). I_γ: Other: 2.11 *3* using branching ratios in 2016Be02 and Iγ(167.3258γ)=2.34 *3*. Mult.: α(L1)exp=0.12 *11* (1968Su01), but value overlaps also with Mult=E2.
75.2[b] *2*	[b]	704.04	2^-	628.849	2^-				E_γ,I_γ: The line coincides with the Pb x rays.
85.32[#] *3*	0.039[#] *8*	290.6611	1^-	205.3451	2^-	M1		8.15	E_γ: Observed only in 1972Sh13.
87.481[#] *3*	0.121[#] *18*	256.9238	2^-	169.4398	3^-	M1		7.59	E_γ: Assigned in 1972Sh13 to depopulate also the level at 372 keV, but the assignment was not confirmed in 2010Ba48 and 2016Be02. Other: 87.43 *10* in 2016Be02. I_γ: Other: 0.076 *21* from $\gamma\gamma$ coin. data in 2016Be02. Mult.: α(K)exp=10.5 *35*, α(L1)exp=3.2 *14* (1968Su01).
[x]89.866[#] *30*	0.034[#] *8*								

$^{188}_{75}Re_{113}$-5

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	δ[d]	α[†]	Comments
92.355[#] *3*	0.27[#] *4*	300.2047	2^+	207.8480	0^+				E_γ: Other: 92.27 *5* from $\gamma\gamma$ coin in 2016Be02. I_γ: Other: 0.84 *6* from $\gamma\gamma$ coin in 2016Be02.
92.464[#] *3*	0.89[#] *10*	156.0489	3^-	63.5867	2^-	M1+E2	0.44 *13*	6.34 *12*	E_γ: Others: 92.47 *20* from $\gamma\gamma$ coin data in 2016Be02, 92.447 keV *6* (1963Sc05). I_γ: Other: 0.84 *9* from $\gamma\gamma$ coin data in 2016Be02. Mult.: From K:L12:M=10.3:2.4:1.0 and corresponding conversion electron coefficients (1968Su01). δ: From subshell ratios and α(K)exp=5.9 *9*, α(L)exp=0.9 *2* (1964Ta07).
92.52[b] *14*	0.057[b] *13*	701.397	$(0,1)^-$	608.999	1^-				
93.63[&] *20*	0.096 *9*	575.719	3^+	482.1384	2^+	M1(+E2)	<1.6		E_γ: Other: 93.577 *3* in 1972Sh13. I_γ: Other: 0.234 *23* in 1972Sh13. Mult.,δ: α(K)exp=3.8 *16* (1968Su01).
94.21[#&] *3*	0.129[#] *19*	798.25	3^-	704.04	2^-				E_γ: Other: 94.32 *6* from $\gamma\gamma$ coin in 2016Be02.
102.51[#&] *2*	0.013[#] *4*	656.827	$(3,4)^+$	554.322	4^+				E_γ: Other: 102.5 *3* in $\gamma\gamma$ coin in 2016Be02. I_γ: Other: <0.013 from branching ratios in 2016Be02 and Iγ(217.07γ)=0.19 *3*.
102.8[b&] *4*	0.20[b] *8*	782.794	3^-	680.113	2^-				E_γ: Other: 102.69 *2* in 1972Sh13. I_γ: Other: 0.023 *7* in 1972Sh13.
105.8530 *3*	2.27 *4*	169.4398	3^-	63.5867	2^-	M1+E2	0.44 *19*	4.21 *15*	Mult.: From K:L12:M=13.1:2.2:0.9 and corresponding conversion electron coefficients (1968Su01). δ: From subshell ratios and α(K)exp=3.8 *5*, α(L)exp=0.7 *2* (1964Ta07). E_γ: Others: 105.862 *3* in 1972Sh13 and 105.960 *8* (1963Sc05). I_γ: Other: 2.04 *17* in 1972Sh13.
107.4218 *11*	0.331 *15*	470.144	3^-	362.721	2^-	M1(+E2)	<0.7		E_γ: Other: 107.425 *3* in 1972Sh13. I_γ: Other: 0.290 *23* in 1972Sh13. Mult.,δ: α(K)exp=3.5 *9* (1968Su01).
108.176[&] *7*	0.027 *8*	737.021	3^-	628.849	2^-				E_γ: Other: 108.19 *3* in 1972Sh13. I_γ: Other: 0.018 *4* in 1972Sh13.
[x]108.64[#] *3*	0.0073[#] *25*								
111.5835 *9*	0.333 *12*	316.9282	3^-	205.3451	2^-	(M1)			E_γ: Other: 111.590 *3* in 1972Sh13. I_γ: Other: 0.48 *4* in 1972Sh13. Mult.: α(K)exp(111.59γ+111.68γ)=3.3 *4* (1968Su01).
111.6733[&] *9*	0.35[@] *4*	342.5857	4^+	230.9123	3^+	(M1)			E_γ: Other: 111.681 *3* in 1972Sh13. I_γ: Other: 0.44 *4* in 1972Sh13. Mult.: α(K)exp(111.59γ+111.68γ)=3.3 *4* (1968Su01).
[x]112.14[#e] *5*	0.0081[#] *24*								
113.533 *9*	0.012 *4*	754.585	$(3,4)^-$	641.049	5^-				
114.5[b&] *3*	0.020[b] *6*	723.177	2^-	608.999	1^-				E_γ: Others: 114.5615 keV *14* in γ-ray singles (2016Be02); 114.563 *5* in 1972Sh13, but the line is complex.

$^{188}_{75}Re_{113}$-6

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	δ[d]	α[†]	Comments
									I_γ: Others: 0.113 *6* in γ-ray singles (2016Be02) 0.113 *11* in 1972Sh13, but the line is complex.
114.67[b&] *10*	0.133[b] *13*	554.322	4^+	439.7533	3^+	M1+E2	1.3 *+25−7*	2.9 *5*	E_γ: Others: 114.5615 keV *14* in γ-ray singles (2016Be02); 114.563 *5* in 1972Sh13. I_γ: Other: 0.113 *11* in 1972Sh13. Mult.,δ: α(K)exp=1.5 *7* (1968Su01).
115.1487 *9*	0.248 *8*	372.0724	3^-	256.9238	2^-	M1(+E2)	<1.5	3.1 *4*	E_γ: Assigned in 1972Sh13 to depopulate also the level at 285 keV, but the assignment was not confirmed in 2010Ba48 and 2016Be02. Other: 115.156 *4* in 1972Sh13. I_γ: Other: 0.30 *3* in 1972Sh13. Mult.: α(K)exp=2.2 *8* (1968Su01).
[x]115.328 *5*	0.026 *4*								
[x]116.52[#] *3*	0.0048[#] *17*								
117.13[&&] *3*	0.015 *3*	1013.41	$(2,3)^+$	896.192	$(2,3)^+$				E_γ: Other: 117.1 *4* from γγ coin in 2016Be02. I_γ: From 1972Sh13. Other: <0.013 from branching ratios in 2016Be02 and Iγ(573.90γ)=0.043 *9*.
117.679 *5*	0.033 *5*	287.1240	4^-	169.4398	3^-				E_γ: Assigned in 1972Sh13 to depopulate also the level at 470 keV, but the assignment was not confirmed in 2010Ba48 and 2016Be02. Other: 117.74 *3* in 1972Sh13. I_γ: Other: 0.025 *6* in 1972Sh13.
[x]119.176 *7*	0.020 *4*								
119.247[&] *6*	0.024 *4*	701.397	$(0,1)^-$	582.149	1^-				E_γ: Other: 119.26 *33* in 1972Sh13. I_γ: Other: 0.030 *6* in 1972Sh13.
[x]121.311 *7*	0.040 *7*								
[x]121.531 *8*	0.025 *6*								
[x]123.278 *8*	0.022 *5*								
123.278[&] *8*	0.022 *5*	734.902	$(1,2)^-$	611.624	$(0,1)^-$				E_γ: Other: 123.270 *33* in 1972Sh13, but placed to depopulate the 680-keV level. I_γ: Other: 0.014 *3* in 1972Sh13, but the line is complex.
[x]125.83[#e] *4*	0.0048[#] *17*								
127.733[&] *3*	0.146 *12*	703.451	4^+	575.719	3^+				E_γ: Other: 127.729 *4* in 1972Sh13. I_γ: Other: 0.290 *23* in 1972Sh13.
128.124[&] *14*	0.013 *5*	737.021	3^-	608.881	4^-				E_γ: Other: 128.13 *3* in 1972Sh13. I_γ: Other: 0.0065 *16* in 1972Sh13.
128.5675 *21*	0.133 *9*	482.1384	2^+	353.5723	1^+				E_γ: Other: 128.56 *4* in 1972Sh13. Placed to depopulate the 284.598 keV level in 1972Sh13. I_γ: Other: 0.113 *11* in 1972Sh13.
129.9797 *24*	0.121 *9*	360.8869	5^+	230.9123	3^+				E_γ: Other: 129.976 *5* in 1972Sh13. I_γ: Other: 0.097 *15* in 1972Sh13.
[x]130.76[#] *3*	0.024[#] *7*								
131.0755 *10*	0.495 *15*	287.1240	4^-	156.0489	3^-	M1			E_γ: Other: 131.079 *5* in 1972Sh13.

$^{188}_{75}Re_{113}$-7

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	δ[d]	α[†]	Comments
									I_γ: Other: 0.45 *5* in 1972Sh13. Mult.: α(L1)exp=0.41 *21* (1968Su01).
132.8210[&] *20*	0.170 *10*	493.707	4+	360.8869	5+				E_γ: Other: 132.822 *5* in 1972Sh13. I_γ: Other: 0.145 *22* in 1972Sh13.
[x]133.19[#] *4*	0.017[#] *5*								
[x]135.297 *9*	0.024 *5*								
135.494[&] *8*	0.032 *6*	782.794	3−	647.296	2−				E_γ: Other: 135.49 *4* in 1972Sh13. I_γ: Other: 0.044 *18* in 1972Sh13.
135.765[&] *11*	0.017 *5*	1025.994	(3,4)+	890.225	(3,4)+				E_γ: Other: 135.70 *5* in 1972Sh13. I_γ: Other: 0.016 *5* in 1972Sh13.
[x]137.48[#] *5*	0.012[#] *3*								
138.7373[&] *17*	0.210 *9*	608.881	4−	470.144	3−	M1+E2	<4	1.6 *4*	E_γ: Other: 138.725 *5* in 1972Sh13, placed at 346.6-keV level. I_γ: Other: 0.20 *3* in 1972Sh13. Mult.,δ: α(K)exp=1.5 *10* (1968Su01).
140.9651[&] *18*	0.181 *8*	483.5509	5+	342.5857	4+	M1			E_γ,I_γ: Complex line. Others: Eγ=140.965 *5* and Iγ=0.161 *24* in 1972Sh13. Mult.: α(K)exp=1.9 *8* (1968Su01).
141.2[b&] *7*	≤0.032[b]	781.890	5−	641.049	5−				E_γ: Others: 140.9651 keV *18* in γ-ray singles (2016Be02); 141.24 *4* in 1972Sh13, but it is associated with the 347-keV level. I_γ: From branching ratios in 2016Be02 using Iγ(173.008γ)=0.110 *8*; Other: 0.065 *10* in 1972Sh13.
141.230 *5*	0.057 *6*	695.552	5+	554.322	4+				
141.7588 *5*	1.407 *20*	205.3451	2−	63.5867	2−	M1+E2	0.38 *23*	1.80 *12*	E_γ: Other: 141.757 *5* in 1972Sh13. I_γ: Other: 1.21 *11* in 1972Sh13. Mult.: From K/L12=5.5 8 and α(K)exp=1.65 *60* (1968Su01). δ: From α(K)exp and K/L12.
142.701[&] *13*	0.017 *5*	822.803	(1,2)−	680.113	2−				E_γ: Other: 142.71 *4* in 1972Sh13, but assigned to the 429.8-keV level. I_γ: Other: 0.012 *3* in 1972Sh13.
143.118 *3*	0.121 *8*	325.8670	4−	182.7504	4−				E_γ: Other: 143.127 *5* in 1972Sh13. I_γ: Other: 0.097 *15* in 1972Sh13.
[x]143.509 *11*	0.021 *5*								
144.1550 *21*	0.121[@] *13*	300.2047	2+	156.0489	3−				E_γ: Other: 144.166 *7* in 1972Sh13. I_γ: Other: 0.057 *8* in 1972Sh13.
145.1505 *14*	0.379 *12*	462.0788	4−	316.9282	3−	M1+E2	0.9 *4*		E_γ: Assigned in 1972Sh13 to depopulate also the level at 430 keV, but the assignment was not confirmed in 2010Ba48 and 2016Be02. Other: 145.155 *5* in 1972Sh13. I_γ: Other: 0.30 *3* in 1972Sh13. Mult.,δ: α(K)exp=0.97 *18* (1968Su01).

$^{188}_{75}Re_{113}$-8

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	δ[d]	α[†]	Comments
[x]145.329 *6*	0.051 *6*								
145.7241[&] *11*	0.517 *14*	353.5723	1^+	207.8480	0^+	(M1)			E_γ: Other: 145.721 *5* in 1972Sh13. I_γ: Other: 0.52 *4* in 1972Sh13. Mult.: α(K)exp=0.97 *18* (1968Su01). δ: 0.9 *4* from α(K)exp=0.97 *18* (1968Su01), but the value is inconsistent with a 1^+ to 0^+ transition, which should be a pure M1.
[x]146.60[#] *5*	0.0081[#] *24*								
[x]146.99[#] *5*	0.0081[#] *24*								
147.452 *22*	0.021 *10*	316.9282	3^-	169.4398	3^-				E_γ: Other: 147.45 *5* in 1972Sh13. I_γ: Other: 0.028 *7* in 1972Sh13.
[x]149.57[#] *5*	0.0081[#] *24*								
150.9708 *20*	0.319 *14*	523.0435	4^-	372.0724	3^-				E_γ: Other: 150.972 *5* in 1972Sh13. I_γ: Other: 0.26 *3* in 1972Sh13.
151.2[b&] *3*	0.060[b] *12*	493.707	4^+	342.5857	4^+				E_γ: Others: 151.116 keV *4* in γ-ray singles (2016Be02); 151.12 *5* in 1972Sh13. I_γ: Others: 0.103 *10* in γ-ray singles (2016Be02); 0.089 *18* in 1972Sh13.
152.56[#&] *5*	0.016[#] *3*	963.23	$(4,5)^+$	810.527	$(3,4)^+$				E_γ: Others: 151.116 *4* in γ-ray singles (2016Be02); 152.7 *3* in γγ coin (2016Be02). I_γ: Other: 0.103 *10* in γ-ray singles (2016Be02).
[x]153.22[#] *5*	0.0056[#] *17*								
[x]153.67[#] *5*	0.0081[#] *24*								
[x]154.11[#] *5*	0.012[#] *3*								
156.050 *6*	0.066 *7*	156.0489	3^-	0.0	1^-	[E2]		0.759	α(K)=0.322 *5*; α(L)=0.331 *5*; α(M)=0.0834 *12*; α(N+..)=0.0228 *4* α(N)=0.0199 *3*; α(O)=0.00287 *4*; α(P)=2.69×10^{-5} *4* E_γ: Other: 156.01 *6* in 1972Sh13. I_γ: Other: 0.081 *12* in 1972Sh13.
156.4267 *12*	0.597 *16*	325.8670	4^-	169.4398	3^-	M1(+E2)	0.3 *3*		E_γ: Other: 156.421 *5* in 1972Sh13. I_γ: Other: 0.54 *4* in 1972Sh13. Mult.,δ: α(K)exp=1.13 *15* (1968Su01).
157.1971[&] *17*	0.352 *13*	339.947	5^-	182.7504	4^-	M1+E2	1.1 *8*	1.0 *4*	E_γ: Other: 157.194 *5* in 1972Sh13. I_γ: Other: 0.33 *3* in 1972Sh13. Mult.,δ: α(K)exp=0.7 *4* (1968Su01).
[x]158.295 *10*	0.030 *6*								
158.710 *5*	0.080 *7*	628.849	2^-	470.144	3^-				E_γ: Other: 158.71 *4* in 1972Sh13. I_γ: Other: 0.063 *6* in 1972Sh13.
159.217[&] *3*	0.187 *9*	446.341	5^-	287.1240	4^-				E_γ: Other: 159.208 *5* in 1972Sh13. I_γ: Other: 0.161 *24* in 1972Sh13.
161.078[&] *4*	0.107 *8*	654.785	5^+	493.707	4^+				E_γ: Other: 161.074 *8*, placed with the 448.2-keV level in

$^{188}_{75}Re_{113}$-9

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	α[†]	Comments
								1972Sh13. I_γ: Other: 0.081 *8* in 1972Sh13.
[x]161.922 *8*	0.044 *6*							
162.318[&] *11*	0.035 *6*	899.341	$(3,4)^-$	737.021	3^-			E_γ: Other: 162.35 *4* in 1972Sh13. I_γ: Other: 0.032 *3* in 1972Sh13.
163.150[&] *14*	0.027 *6*	656.827	$(3,4)^+$	493.707	4^+			E_γ: Other: 163.18 *4* in 1972Sh13. I_γ: Other: 0.022 *3* in 1972Sh13.
[x]163.63[#] *5*	0.011[#] *3*							
[x]165.24[#] *5*	0.007[#] *3*							
166.729 *14*	0.031 *7*	372.0724	3^-	205.3451	2^-			E_γ: Other: 166.74 *4* in 1972Sh13. I_γ: Other: 0.030 *4* in 1972Sh13.
167.3258 *6*	2.34 *3*	230.9123	3^+	63.5867	2^-	E1	0.1016	E_γ: Other: 167.327 *4* in 1972Sh13. I_γ: Other: 1.57 *12* in 1972Sh13. Mult.: α(K)exp≤0.14 (1968Su01).
167.8[b&] *3*	0.078[b] *20*	916.24	$(3,4)^-$	748.121	$(2,3)^-$			E_γ: Others: 167.898 *8* in γ-ray singles (2016Be02); 167.910 *4* in 1972Sh13. I_γ: From branching ratios in 2016Be02 and Iγ(599.14γ)=0.039 *10*. Others: 0.064 *8* in γ-ray singles (2016Be02); 0.53 *8* in 1972Sh13.
168.0[b&] *3*	0.071[b] *22*	924.40	$(2,3)^+$	756.590	$(1,2)^+$			E_γ: Others: 167.898 *8* in γ-ray singles (2016Be02); 167.910 *4* in 1972Sh13. I_γ: From branching ratios in 2016Be02 and Iγ(348.64γ)=0.022 *6*. Others: 0.064 *8* in γ-ray singles (2016Be02); 0.53 *8* in 1972Sh13.
169.441 *5*	0.100 *9*	169.4398	3^-	0.0	1^-	[E2]	0.566	α(K)=0.261 *4*; α(L)=0.231 *4*; α(M)=0.0581 *9*; α(N+..)=0.01586 *23* α(N)=0.01383 *20*; α(O)=0.00201 *3*; α(P)=2.20×10^{-5} *3* E_γ: Other: 169.47 *6* in 1972Sh13. I_γ: Other: 0.74 *11* in 1972Sh13.
169.816 *16*	0.028 *7*	325.8670	4^-	156.0489	3^-			E_γ: Other: 169.84 *6* in 1972Sh13. I_γ: Other: 0.025 *8* in 1972Sh13.
170.52[&] *3*	0.013 *6*	890.225	$(3,4)^+$	719.633	$(4,5)^+$			E_γ: Other: 170.83 *6* in 1972Sh13, but the line is complex. I_γ: Other: 0.044 *7* in 1972Sh13.
[x]170.780 *9*	0.051 *8*							
170.962[&] *10*	0.050 *7*	874.414	$(4,5)^+$	703.451	4^+			E_γ: Other: 170.95 *6* in 1972Sh13, but the line is complex. I_γ: Other: 0.050 *15* in 1972Sh13.
[x]171.20[#] *5*	0.015[#] *5*							
[x]172.25[#] *5*	0.015[#] *5*							
173.008[&] *5*	0.110 *8*	781.890	5^-	608.881	4^-			E_γ: Other: 173.006 *6* in 1972Sh13. I_γ: Other: 0.077 *8* in 1972Sh13.
[x]174.72[#] *7*	0.012[#] *4*							
[x]175.27[#] *7*	0.0048[#] *17*							
176.288[&] *23*	0.022 *7*	994.026	$(3,4)^+$	817.679	$(2,3)^+$			E_γ: Other: 176.28 *5* in 1972Sh13. I_γ: Other: 0.023 *5* in 1972Sh13.

$^{188}_{75}Re_{113}$-10

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	δ[d]	Comments
177.153[&] 5	0.086 7	647.296	2⁻	470.144	3⁻			E_γ: Other: 177.143 8 in 1972Sh13. I_γ: Other: 0.073 11 in 1972Sh13.
178.1359 22	0.314 11	360.8869	5⁺	182.7504	4⁻			E_γ: Other: 178.134 6 in 1972Sh13. I_γ: Other: 0.27 3 in 1972Sh13.
178.77[b&] 13	0.08[b] 4	641.049	5⁻	462.0788	4⁻			E_γ: Others: 178.852 5 in γ-ray singles (2016Be02); 178.839 6 in 1972Sh13, but placed with the 541.553-keV level. I_γ: From branching ratio in 2016Be02 and Iγ(268.85γ)=0.014 7. Other: 0.103 7 in γ-ray singles (2016Be02) and 0.105 16 in 1972Sh13.
179.1[b] 4	0.022[b] 4	737.021	3⁻	558.231	4⁻			
179.1[b] 4	0.0039[b] 7	859.224	(2,3)⁻	680.113	2⁻			E_γ: Other: 178.852 keV 5 in γ-ray singles (2016Be02). I_γ: Other: 0.103 7 in γ-ray singles (2016Be02).
179.1[b] 4	0.022[b] 4	916.24	(3,4)⁻	737.021	3⁻			E_γ: Other: 178.852 5 in γ-ray singles (2016Be02). I_γ: Other: 0.103 7 in γ-ray singles (2016Be02).
180.577[&] 12	0.031 5	900.211	(4,5)⁺	719.633	(4,5)⁺			E_γ: Other: 180.60 5 in 1972Sh13. I_γ: Other: 0.033 5 in 1972Sh13.
181.558[&] 8	0.060 6	739.807	(4,5)⁻	558.231	4⁻			E_γ: Other: 181.58 5 in 1972Sh13. I_γ: Other: 0.048 7 in 1972Sh13.
181.9314 18	0.413 12	482.1384	2⁺	300.2047	2⁺			E_γ: Other: 181.942 6 in 1972Sh13. I_γ: Other: 0.39 3 in 1972Sh13.
[x]183.04[#] 5	0.023[#] 5							
183.062[&] 19	0.020 5	470.144	3⁻	287.1240	4⁻			
[x]184.25[#] 7	0.0048[#] 17							
185.639[&] 5	0.103 7	708.683	5⁻	523.0435	4⁻			E_γ: Other: 185.638 7 in 1972Sh13. I_γ: Other: 0.077 8 in 1972Sh13.
187.794[&] 6	0.082 6	910.980	(2,3)⁻	723.177	2⁻			E_γ: Other: 187.83 5 in 1972Sh13. I_γ: Other: 0.059 9 in 1972Sh13.
[x]188.058 21	0.019 5							
188.8109 9	1.445 20	360.8869	5⁺	172.0758	6⁻	E1		E_γ: Other: 188.813 7 in 1972Sh13. I_γ: Other: 1.05 8 in 1972Sh13. Mult.: α(K)exp≤0.13.
189.330 10	0.036[@] 5	372.0724	3⁻	182.7504	4⁻			E_γ: Other: 189.32 5 in 1972Sh13. Doublet. I_γ: Other: 0.021 6 in 1972Sh13. Doublet.
189.951 4	0.166 8	550.837	(4,5)⁺	360.8869	5⁺			E_γ: Other: 189.32 5 in 1972Sh13. Doublet. I_γ: Other: 0.021 6 in 1972Sh13. Doublet.
[x]190.004[#] 9	0.113[#] 17							
190.371[&] 3	0.282 10	516.237	5⁻	325.8670	4⁻	M1(+E2)	<1.2	E_γ: Other: 190.374 7 in 1972Sh13. I_γ: Other: 0.18 3 in 1972Sh13. Mult.,δ: α(K)exp=1.0 5 (1968Su01).
[x]190.857 24	0.019 5							

$^{188}_{75}Re_{113}$-11

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult. c	δ d	α †	Comments
191.535& 22	0.023 6	800.440	(2,3)$^-$	608.881	4$^-$				E_γ: Other: 191.58 5 in 1972Sh13, but the line is complex. I_γ: Other: 0.015 5 in 1972Sh13, but the line is complex.
191.76& 3	0.016 5	703.451	4$^+$	511.715	4$^+$				E_γ: Other: 191.74 5 in 1972Sh13. I_γ: Other: 0.015 5 in 1972Sh13.
x192.55# 5	0.0048# 17								
193.3382 14	0.858 18	256.9238	2$^-$	63.5867	2$^-$	M1(+E2)	<1.8	0.61 20	E_γ: Other: 193.346 10 in 1972Sh13. I_γ: Other: 0.81 5 in 1972Sh13. Mult.: α(K)exp=0.56 26 (1968Su01).
196.353& 4	0.156 9	754.585	(3,4)$^-$	558.231	4$^-$				E_γ: Other: 196.36 6 in 1972Sh13, but placed to depopulate the 352-keV level. I_γ: Other: 0.085 13 in 1972Sh13, but placed to depopulate the 352-keV level.
197.178 12	0.047 6	523.0435	4$^-$	325.8670	4$^-$				E_γ: Other: 197.17 6 in 1972Sh13. I_γ: Other: 0.015 4 in 1972Sh13.
197.561& 15	0.039 6	854.357	(4,5)$^+$	656.827	(3,4)$^+$				E_γ: Other: 197.17 6 in 1972Sh13. I_γ: Other: 0.019 6 in 1972Sh13.
199.5307 11	1.342 22	499.7354	3$^+$	300.2047	2$^+$	M1+E2	0.82 17		E_γ: Other: 199.512 5 in 1972Sh13. I_γ: Other: 1.09 9 in 1972Sh13. Mult.,δ: α(K)exp=0.43 4 (1968Su01).
x201.56# 6	0.0089# 22								
x202.00# 6	0.0057# 17								
202.630 16	0.033 6	372.0724	3$^-$	169.4398	3$^-$				E_γ: Other: 202.63 6 in 1972Sh13. I_γ: Other: 0.040 8 in 1972Sh13.
205.3403 23	0.483 14	205.3451	2$^-$	0.0	1$^-$	[M1]			E_γ: Other: 205.349 8 in 1972Sh13. I_γ: Other: 0.46 5 in 1972Sh13.
206.14 6	0.009 6	523.0435	4$^-$	316.9282	3$^-$				E_γ: Other: 206.05 9 in 1972Sh13. I_γ: Other: 0.011 3 in 1972Sh13.
206.673 11	0.057 7	362.721	2$^-$	156.0489	3$^-$				E_γ: Other: 206.676 13 in 1972Sh13. I_γ: Other: 0.059 9 in 1972Sh13.
207.8477 10	5.11 7	207.8480	0$^+$	0.0	1$^-$	E1			E_γ: Other: 207.849 5 in 1972Sh13. I_γ: Other: 4.8 4 in 1972Sh13. Mult.: α(K)exp=0.026 11 (1968Su01).
208.8408 22	1.14 3	439.7533	3$^+$	230.9123	3$^+$	M1+E2	0.77 +24−21		E_γ: Other: 208.844 8 in 1972Sh13. I_γ: Other: 1.05 8 in 1972Sh13. Mult.,δ: α(K)exp=0.39 5 (1968Su01).
211.510 3	0.279 12	511.715	4$^+$	300.2047	2$^+$				E_γ: Other: 211.52 8 in 1972Sh13. I_γ: Other: 0.29 4 in 1972Sh13.
213.28# 9	0.0089# 24	470.144	3$^-$	256.9238	2$^-$				E_γ: 213.97γ placed to depopulate the 737-keV level in 2016Be02.

$^{188}_{75}Re_{113}$-12

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	δ[d]	α†	Comments
213.97& 4	0.016 6	737.021	3$^-$	523.0435	4$^-$				E_γ: Other: 214.10 9 in 1972Sh13. I_γ: Other: 0.015 4 in 1972Sh13.
216.021 7	0.313 23	372.0724	3$^-$	156.0489	3$^-$				E_γ: Other: 216.017 7 in 1972Sh13. I_γ: Other: 0.29 4 in 1972Sh13.
217.07[b]& 11	0.19[b] 3	656.827	(3,4)$^+$	439.7533	3$^+$				E_γ: Other: 217.098 7 in 1972Sh13. I_γ: Other: 0.22 3 in 1972Sh13.
217.083&& 9	0.219 20	1088.546	(2,3,4)$^-$	871.445	(2,3)$^-$				E_γ: Other: 217.098 7 in 1972Sh13. I_γ: Other: 0.22 3 in 1972Sh13.
218.27& 5	0.021 9	558.231	4$^-$	339.947	5$^-$				E_γ: Other: 218.29 6 in 1972Sh13. I_γ: Other: 0.021 7 in 1972Sh13.
x218.80# 6	0.019# 6								
219.430 3	0.78 3	582.149	1$^-$	362.721	2$^-$	M1+E2	0.9 3	0.45 10	E_γ: Other: 219.449 8 in 1972Sh13. I_γ: Other: 0.694 14 in 1972Sh13. Mult.: α(K)exp=0.43 7, α(L1)exp+α(L2)exp=0.088 16 (1968Su01). δ: from K/(L1+L2)=4.9 6 (1968Su01).
221.30& 4	0.024 9	703.451	4$^+$	482.1384	2$^+$				E_γ: Other: 221.35 6 in 1972Sh13. I_γ: Other: 0.025 6 in 1972Sh13.
222.96& 4	0.024 9	739.20	6$^-$	516.237	5$^-$				E_γ: Other: 222.96 7 in 1972Sh13, but assigned to depopulate the 575-keV level. I_γ: Other: 0.025 6 in 1972Sh13, but assigned to depopulate the 575-keV level.
223.527 14	0.110 13	287.1240	4$^-$	63.5867	2$^-$				E_γ: Other: 223.60 7 in 1972Sh13. I_γ: Other: 0.089 9 in 1972Sh13.
x223.804 12	0.063 15								
x224.60# 6	0.019# 5								
x225.13# 6	0.016# 5								
x225.94#[e] 6	0.0056# 17								
227.0731 8	2.42 5	290.6611	1$^-$	63.5867	2$^-$	M1(+E2)	0.2 2	0.47 4	E_γ: Other: 227.082 7 in 1972Sh13. I_γ: Other: 2.42 in 1972Sh13 (used for normalization). Mult.: α(K)exp=0.42 4, α(L1)exp+α(L2)exp=0.068 15. δ: $\leq$ 0.4 from K/L12=6.2 13 and α(K)=0.42 4 (1968Su01).
228.573& 24	0.053 11	582.149	1$^-$	353.5723	1$^+$				E_γ: Other: 228.62 7 in 1972Sh13. I_γ: Other: 0.044 9 in 1972Sh13.
x229.53 4	0.052 12								
x230.82# 7	0.013# 4								
231.894& 16	0.027 8	807.628	(1,2)$^+$	575.719	3$^+$				E_γ: Other: 231.92 7 in 1972Sh13. I_γ: Other: 0.033 8 in 1972Sh13.
232.354& 5	0.112 12	558.231	4$^-$	325.8670	4$^-$				E_γ: Other: 232.35 7 in 1972Sh13. I_γ: Other: 0.105 16 in 1972Sh13.

$^{188}_{75}Re_{113}$-13

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	δ[d]	Comments
233.33[&] *4*	0.011 *7*	890.225	$(3,4)^+$	656.827	$(3,4)^+$			E_γ: Other: 233.28 *7* in 1972Sh13. I_γ: Other: 0.022 *4* in 1972Sh13.
234.412 *20*	0.022 *7*	439.7533	3^+	205.3451	2^-			E_γ: Other: 234.39 *7* in 1972Sh13. I_γ: Other: 0.030 *6* in 1972Sh13.
234.50 *4*	0.036 *11*	810.527	$(3,4)^+$	575.719	3^+			
x235.86[#] *7*	0.080[#] *12*							
235.925 *18*	0.092 *14*	523.0435	4^-	287.1240	4^-			E_γ: Other: 238.369 *15* in 1972Sh13. I_γ: Other: 0.157 *24* in 1972Sh13.
236.65[b] *3*	1.916[b] *11*	300.2047	2^+	63.5867	2^-	(E1)		E_γ: Others: 236.6219 *20* in γ-ray singles of 2016Be02; 236.647 *8* in 1972Sh13. I_γ: Others: 2.29 *5* in γ-ray singles of 2016Be02; 1.86 *15* in 1972Sh13. Mult.: α(K)exp=0.073 *19* (1968Su01).
236.79[b] *9*	0.020[b] *6*	608.881	4^-	372.0724	3^-			E_γ: Other: 236.6219 *20* in γ-ray singles of 2016Be02. I_γ: Other: 2.29 *5* in γ-ray singles of 2016Be02.
238.356[&] *10*	0.178 *17*	750.062	$(3,4,5)^+$	511.715	4^+			E_γ: Other: 238.369 *15* in 1972Sh13, but placed to depopulate the 523-keV level. I_γ: Other: 0.157 *24* in 1972Sh13, but placed to depopulate the 523-keV level.
240.19[&] *3*	0.047 *12*	944.25	$(1,2)^-$	704.04	2^-			E_γ: Other: 240.26 *11* in 1972Sh13, but the line is complex. I_γ: Other: 0.044 *9* in 1972Sh13.
x240.43[#] *7*	0.026[#] *8*							
241.308[&] *13*	0.061 *13*	558.231	4^-	316.9282	3^-			E_γ: Other: 241.30 *7* in 1972Sh13. Placed to depopulate the 541.8-keV level in 1972Sh13. I_γ: Other: 0.044 *9* in 1972Sh13.
241.941[&] *17*	0.044 *12*	817.679	$(2,3)^+$	575.719	3^+			E_γ: Other: 241.93 *7* in 1972Sh13. I_γ: Other: 0.033 *10* in 1972Sh13.
x245.13[#] *7*	0.033[#] *10*							
246.259 *24*	0.066 *12*	608.999	1^-	362.721	2^-			E_γ: Other: 246.28 *8* in 1972Sh13. I_γ: Other: 0.065 *13* in 1972Sh13.
246.60 *3*	0.020 *9*	708.683	5^-	462.0788	4^-			
247.117[&] *23*	0.061 *11*	1137.41	$(3,4)^+$	890.225	$(3,4)^+$			E_γ: Other: 247.15 *8* in 1972Sh13, but associated with the 430-keV level. I_γ: Other: 0.065 *13* in 1972Sh13.
248.8[&] *3*	0.021 *9*	799.544	5^+	550.837	$(4,5)^+$			E_γ: From $\gamma\gamma$ coin in 2016Be02. Other: 248.72 *8* in 1972Sh13. I_γ: Other: 0.10 *3* in 1972Sh13.
251.226 *3*	1.06 *3*	482.1384	2^+	230.9123	3^+	M1+E2	0.9 *4*	E_γ: Other: 251.239 *8* in 1972Sh13. I_γ: Other: 1.19 *12* in 1972Sh13. Mult.,δ: α(K)exp=0.22 *4* (1968Su01).
252.952[&] *21*	0.066 *11*	723.177	2^-	470.144	3^-			E_γ: Other: 252.974 *17* in 1972Sh13. I_γ: Other: 0.081 *24* in 1972Sh13.
256.54 *4*	0.019 *10*	462.0788	4^-	205.3451	2^-			

$^{188}_{75}Re_{113}$-14

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	δ[d]	α[†]	Comments
256.924 *3*	0.87 *4*	256.9238	2^-	0.0	1^-	M1+E2	1.4 *6*	0.24 *7*	E_γ: Other: 256.924 *1* in 1972Sh13. I_γ: Other: 1.05 *11* in 1972Sh13. Mult.: α(K)exp=0.16 *3* (1968Su01).
[x]258.57[#] *7*	0.014[#] *4*								
[x]260.171 *23*	0.056 *9*								
262.29[&] *4*	0.030 *8*	708.683	5^-	446.341	5^-				E_γ: Other: 262.761 *13* in 1972Sh13, but the line is complex. I_γ: Other: 0.097 *15* in 1972Sh13, but the line is complex.
262.796[&] *7*	0.325 *16*	493.707	4^+	230.9123	3^+				E_γ: Other: 262.761 *13* in 1972Sh13. I_γ: Other: 0.097 *15* in 1972Sh13.
263.69[&] *8*	0.014 *7*	703.451	4^+	439.7533	3^+				E_γ: Other: 263.67 *14* in 1972Sh13. I_γ: Other: 0.024 *7* in 1972Sh13.
264.75[#] *14*	0.018[#] *6*	470.144	3^-	205.3451	2^-				E_γ,I_γ: not confirmed in 2010Ba48 and 2016Be02.
266.4[b&] *3*	0.030[b] *5*	523.0435	4^-	256.9238	2^-				E_γ: Others: 266.126 *16* in γ-ray singles of 2016Be02; 266.85 *10* in 1972Sh13. I_γ: Others: 0.090 *10* in γ-ray singles of 2016Be02; 0.066 *13* in 1972Sh13.
266.6[b] *3*	0.071[b] *6*	628.849	2^-	362.721	2^-				E_γ: Others: 266.126 *16* in γ-ray singles of 2016Be02; 266.18 *2* in 1972Sh13. I_γ: Others: 0.090 *10* in γ-ray singles of 2016Be02; 0.089 *13* in 1972Sh13.
266.84[&] *3*	0.045 *8*	737.021	3^-	470.144	3^-				E_γ: Other: 266.85 *10* in 1972Sh13. I_γ: Other: 0.066 *13* in 1972Sh13.
268.85[&] *8*	0.014 *7*	641.049	5^-	372.0724	3^-				E_γ: Other: 268.95 *14* in 1972Sh13. I_γ: Other: 0.0065 *16* in 1972Sh13.
271.08[&] *3*	0.039 *8*	558.231	4^-	287.1240	4^-				E_γ: Other: 271.07 *10* in 1972Sh13. I_γ: Other: 0.034 *10* in 1972Sh13.
[x]272.35[#] *15*	0.007[#] *3*								
273.539[&] *25*	0.067 *9*	831.826	2^-	558.231	4^-				E_γ: Other: 273.59 *10* in 1972Sh13. I_γ: Other: 0.066 *20* in 1972Sh13.
274.31[b&] *8*	0.727[b] *23*	482.1384	2^+	207.8480	0^+	E2			E_γ: Others: 274.322 *3* in γ-ray singles of 2016Be02; 274.317 *11* in 1972Sh13. I_γ: Others: 1.22 *3* in γ-ray singles of 2016Be02; 1.05 *10* in 1972Sh13. Mult.: α(K)exp=0.19 *3* (1968Su01).
274.43[b] *4*	0.541[b] *11*	756.590	$(1,2)^+$	482.1384	2^+				E_γ: Others: 274.322 *3* in γ-ray singles of 2016Be02; 275.510 *9* in 1972Sh1. I_γ: Others: 1.22 *3* in γ-ray singles of 2016Be02; 0.73 *7* in 1972Sh13.
275.237 *14*	0.083 *16*	647.296	2^-	372.0724	3^-				
275.513[&] *4*	0.74 *4*	575.719	3^+	300.2047	2^+				
276.809 *18*	0.088 *10*	482.1384	2^+	205.3451	2^-				E_γ: Other: 276.82 *10* in 1972Sh13. I_γ: Other: 0.065 *10* in 1972Sh13.

$^{188}_{75}Re_{113}$-15

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	δ[d]	α[†]	Comments
277.96[&] *3*	0.062 *10*	748.121	(2,3)$^-$	470.144	3$^-$				E_γ: Other: 277.96 *10* in 1972Sh13. I_γ: Other: 0.065 *10* in 1972Sh13.
[x]278.40[#] *10*	0.011[#] *3*								
[x]280.28[#] *10*	0.0081[#] *24*								
[x]280.76[#] *10*	0.0081[#] *24*								
[x]281.10[#] *10*	0.0081[#] *24*								
[x]282.22 *4*	0.033 *8*								
282.8[&] *3*	0.021 *8*	644.98	1$^-$	362.721	2$^-$				E_γ: From γγ coin in 2016Be02. Other: 282.98 *12* in 1972Sh13. I_γ: Other: 0.0081 *24* in 1972Sh13.
[x]283.67[#] *12*	0.0081[#] *24*								
284.570 *7*	0.352 *17*	647.296	2$^-$	362.721	2$^-$				E_γ: Other: 284.585 *16* in 1972Sh13. I_γ: Other: 0.29 *4* in 1972Sh13.
[x]285.54[#] *12*	0.023[#] *7*								
286.52[&] *3*	0.045 *9*	1157.796	(1,2)$^-$	871.445	(2,3)$^-$				E_γ: Other: 286.70 *12* in 1972Sh13. I_γ: Other: 0.023 *7* in 1972Sh13.
287.815[&] *15*	0.147 *12*	799.544	5$^+$	511.715	4$^+$				E_γ: Other: 287.86 *12* in 1972Sh13, but the line is complex. I_γ: Other: 0.105 *16* in 1972Sh13, but the line is complex.
290.274[&] *25*	0.056 *16*	446.341	5$^-$	156.0489	3$^-$				
290.6628 *12*	5.13 *10*	290.6611	1$^-$	0.0	1$^-$	M1+E2	0.42 *17*	0.22 *4*	E_γ: Other: 290.669 *13* in 1972Sh13. I_γ: Other: 5.2 *3* in 1972Sh13. Mult.: α(K)exp=0.189 14, α(L1)exp+α(L2)exp=0.026 *3* (1968Su01). δ: from K/(L1+L2)=7.3 10 and α(K)exp=0.189 14.
291.480 *4*	1.07 *3*	582.149	1$^-$	290.6611	1$^-$				E_γ: Other: 291.488 *10* in 1972Sh13. I_γ: Other: 1.01 *5* in 1972Sh13.
291.97 *6*	0.017 *12*	608.881	4$^-$	316.9282	3$^-$				
293.5[b&] *3*	0.0152[b] *23*	851.87	(3,4)$^-$	558.231	4$^-$				E_γ: Others: 293.74 *4* in γ-ray singles of 2016Be02; 293.82 *12* in 1972Sh13. I_γ: Others: 0.056 *9* in γ-ray singles of 2016Be02; 0.077 *12* in 1972Sh13.
294.26[b&] *16*	0.043[b] *13*	654.785	5$^+$	360.8869	5$^+$				E_γ: Others: 293.74 *4* in γ-ray singles of 2016Be02; 293.82 *12* in 1972Sh1. I_γ: Others: 0.056 *9* in γ-ray singles of 2016Be02; 0.077 *12* in 1972Sh13.
295.99 *8*	0.022 *8*	656.827	(3,4)$^+$	360.8869	5$^+$				
297.3[b&] *5*	0.012[b] *4*	1088.546	(2,3,4)$^-$	791.514	(2,3)$^-$				E_γ: Others: 297.93 *4* in γ-ray singles of 2016Be02; 297.83 *18* in 1972Sh1. I_γ: Others: 0.030 *12* in γ-ray singles of 2016Be02; 0.031 *7* in 1972Sh13.

$^{188}_{75}Re_{113}$-16

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult. [c]	δ [d]	α †	Comments
298.42 [b] *15*	0.056 [b] *6*	1001.44	(2,3)$^+$	703.451	4$^+$				E_γ: Others: 297.93 *4* in γ-ray singles of 2016Be02; 297.83 *18* in 1972Sh13. I_γ: Others: 0.030 *12* in γ-ray singles of 2016Be02, 0.031 *7* in 1972Sh13.
298.5 [b&] *3*	0.032 [b] *6*	874.414	(4,5)$^+$	575.719	3$^+$				E_γ: Others: 297.93 *4* in γ-ray singles of 2016Be02; 297.83 *18* in 1972Sh13. I_γ: Others: 0.030 *12* in γ-ray singles of 2016Be02; 0.021 *7* in 1972Sh13.
299.109 *12*	0.210 *15*	362.721	2$^-$	63.5867	2$^-$	M1(+E2)	<1.3	0.21 *3*	E_γ: Other: 299.125 *30* in 1972Sh13. I_γ: Other: 0.161 *11* in 1972Sh13 and 0.117 *11* in γγ coin in 2016Be02. Mult.,δ: α(K)exp=0.33 *17* (1968Su01).
300.20 [b] *6*	0.786 [b] *6*	300.2047	2$^+$	0.0	1$^-$				E_γ: Others: 300.201 *4* in γ-ray singles of 2016Be02; 300.210 *11* in 1972Sh1. I_γ: Others: 1.07 *3* in γ-ray singles of 2016Be02; 1.05 *5* in 1972Sh13.
300.2 [b&] *2*	0.117 [b] *23*	799.544	5$^+$	499.7354	3$^+$				E_γ: Others: 300.201 *4* in γ-ray singles of 2016Be02; 300.210 *11* in 1972Sh13. I_γ: Others: 1.07 *3* in γ-ray singles of 2016Be02; 1.05 *5* in 1972Sh13.
306.03 *7*	0.021 *13*	462.0788	4$^-$	156.0489	3$^-$				E_γ: Other: 306.11 *19* in 1972Sh13. I_γ: Other: 0.027 *8* in 1972Sh13.
308.44 *3*	0.074 *10*	372.0724	3$^-$	63.5867	2$^-$				E_γ: Other: 308.44 *18* in 1972Sh13. I_γ: Other: 0.077 *12* in 1972Sh13.
[x]310.07 [#e] *19* [x]310.97 *5*	0.016 [#] *5* 0.040 *9*								
312.716 [&] *12*	0.19 *3*	482.1384	2$^+$	169.4398	3$^-$				E_γ: Other: 312.73 *28* in 1972Sh13. I_γ: Other: 0.141 *11* in 1972Sh13.
316.4 [b] *8*	0.009 [b] *4*	925.19	(2,3,4)$^-$	608.881	4$^-$				E_γ: Other: 316.452 *18* in γ-ray singles of 2016Be02. I_γ: Other: 0.032 *4* in γ-ray singles of 2016Be02.
317.2 [b] *3*	0.112 [b] *13*	680.113	2$^-$	362.721	2$^-$				E_γ: Others: 317.370 *21* in γ-ray singles of 2016Be02; 317.35 *4* in 1972Sh13. I_γ: Others: 0.090 *9* in γ-ray singles of 2016Be02; 0.089 *18* in 1972Sh13.
317.21 [b] *21*	0.016 [b] *8*	810.527	(3,4)$^+$	493.707	4$^+$				E_γ: Other: 317.370 *21* in γ-ray singles of 2016Be02. I_γ: From branching ratios in 2016Be02 and Iγ(579.543γ)=0.201 *18*. Other: 0.090 *9* in γ-ray singles of 2016Be02.
318.16 [b&] *17*	0.027 [b] *4*	817.679	(2,3)$^+$	499.7354	3$^+$				E_γ: Others: 318.311 *11* in γ-ray singles of 2016Be02; 318.366 *40* in 1972Sh13, but the line is complex. I_γ: Others: 0.255 *13* in γ-ray singles of 2016Be02; 0.186 *15* in 1972Sh13, but the line is complex.
318.30 [b] *8*	0.097 [b] *20*	608.999	1$^-$	290.6611	1$^-$				E_γ: Others: 318.311 *11* in γ-ray singles of 2016Be02; 318.37 *4*

$^{188}_{75}Re_{113}$-17

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
						in 1972Sh13. I_γ: Others: 0.225 *13* in γ-ray singles of 2016Be02; 0.186 *15* in 1972Sh13, but the line is complex.
319.87& *3*	0.021 *8*	550.837	$(4,5)^+$	230.9123	3^+	E_γ: Other: 320.94 *14* in 1972Sh13. Complex line. I_γ: Other: 0.161 *24* in 1972Sh13. Complex line.
320.26 *5*	0.041 *8*	977.10	$(2,3)^+$	656.827	$(3,4)^+$	
320.48& *3*	0.028 *11*	896.192	$(2,3)^+$	575.719	3^+	E_γ: Other: 320.94 *14* in 1972Sh13. Complex line. I_γ: Other: 0.161 *24* in 1972Sh13. Complex line.
320.962 *15*	0.163 *23*	611.624	$(0,1)^-$	290.6611	1^-	
321.38 *4*	0.014 *9*	791.514	$(2,3)^-$	470.144	3^-	
321.73 *6*	0.024 *13*	608.881	4^-	287.1240	4^-	
x322.79# *12*	0.031# *9*					
323.44& *5*	0.014 *7*	1106.26	$(3,4)^-$	782.794	3^-	E_γ: Other: 323.94 *21* in 1972Sh13. I_γ: Other: 0.031 *9* in 1972Sh13.
325.492& *20*	0.095 *9*	807.628	$(1,2)^+$	482.1384	2^+	E_γ: Other: 325.50 *14* in 1972Sh13. I_γ: Other: 0.105 *16* in 1972Sh13.
328.36& *6*	0.022 *6*	810.527	$(3,4)^+$	482.1384	2^+	E_γ: Other: 328.38 *22* in 1972Sh13, assigned to the 630-keV level. I_γ: Other: 0.052 *10* in 1972Sh13, assigned to the 630-keV level.
330.27& *7*	0.025 *6*	800.440	$(2,3)^-$	470.144	3^-	E_γ: Other: 330.35 *22* in 1972Sh13, but the line is complex. I_γ: Other: 0.052 *10* in 1972Sh13, but the line is complex.
x333.46 *5*	0.028 *6*					
335.510& *23*	0.072 *8*	817.679	$(2,3)^+$	482.1384	2^+	E_γ: Other: 335.58 *14* in 1972Sh13. I_γ: Other: 0.113 *23* in 1972Sh13.
336.626 *22*	0.024 *6*	708.683	5^-	372.0724	3^-	
337.242& *22*	0.084 *8*	994.026	$(3,4)^+$	656.827	$(3,4)^+$	E_γ: Other: 337.368 *44* in 1972Sh13. I_γ: Other: 0.11 *3* in 1972Sh13.
338.19b& *5*	0.283b *7*	628.849	2^-	290.6611	1^-	E_γ: Others: 338.189 *19* in γ-ray singles of 2016Be02; 338.22 *4* in 1972Sh13. I_γ: Other: 0.235 *23* in γ-ray singles of 2016Be02; 0.40 *6* in 1972Sh13.
338.29b& *13*	0.066b *6*	913.816	$(2,3)^+$	575.719	3^+	E_γ: Others: 338.189 *19* in γ-ray singles of 2016Be02; 338.22 *4* in 1972Sh13, but the line is complex. I_γ: Other: 0.235 *23* in γ-ray singles of 2016Be02; 0.40 *6* in 1972Sh13.
339.580 *24*	0.019 *6*	1207.95	$(2,3)^-$	868.352	$(2,3)^-$	
340.34 *6*	0.025 *6*	523.0435	4^-	182.7504	4^-	E_γ: Other: 340.26 *23* in 1972Sh13. I_γ: Other: 0.032 *10* in 1972Sh13.
341.0b *6*	0.0059b *23*	899.341	$(3,4)^-$	558.231	4^-	E_γ: Other: 341.57 *3* in γ-ray singles of 2016Be02. I_γ: Other: 0.050 *13* in γ-ray singles of 2016Be02.
341.81b& *11*	0.051b *8*	854.357	$(4,5)^+$	511.715	4^+	E_γ: Others: 341.57 *3* in γ-ray singles of 2016Be02; 341.653 *22* in 1972Sh13. I_γ: Others: 0.050 *13* in γ-ray singles of 2016Be02; 0.137 *21* in 1972Sh13.
343.68& *6*	0.027 *6*	1063.33	$(3,4)^+$	719.633	$(4,5)^+$	E_γ: Other: 343.67 *23* in 1972Sh13. I_γ: Other: 0.024 *7* in 1972Sh13.
344.72b& *15*	0.034b *4*	575.719	3^+	230.9123	3^+	E_γ: Others: 344.77 *5* in γ-ray singles of 2016Be02; 344.74 *23* in 1972Sh13. I_γ: Others: 0.032 *6* in γ-ray singles of 2016Be02. 0.048 *15* in 1972Sh13.

$^{188}_{75}Re_{113}$-18

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
344.8[b&] *6*	0.0070[b] *23*	1157.796	(1,2)$^-$	812.99	(1,2)$^-$	E_γ: Others: 344.77 *5* in γ-ray singles of 2016Be02; 344.74 *23* in 1972Sh13. I_γ: Others: 0.032 *6* in γ-ray singles of 2016Be02. 0.048 *15* in 1972Sh13.

$^{188}_{75}Re_{113}$-19

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ[‡]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[c]	δ[d]	Comments
346.05[&] *7*	0.022 *6*	1026.22	(2,3)$^-$	680.113	2$^-$			E_γ: Other: 346.15 *25* in 1972Sh13, but the line is complex. I_γ: Other: 0.032 *10* in 1972Sh13.
346.776[&] *17*	0.028 *6*	516.237	5$^-$	169.4398	3$^-$			E_γ: Other: 346.69 *25* in 1972Sh13. I_γ: Other: 0.48 *15* in 1972Sh13.
348.64[&] *8*	0.022 *6*	924.40	(2,3)$^+$	575.719	3$^+$			E_γ: Other: 348.79 *25* in 1972Sh13, but assigned to the 557-keV level. I_γ: Other: 0.048 *15* in 1972Sh13.
[x]349.35 *5*	0.031 *6*							
352.082 *6*	0.172 *14*	608.999	1$^-$	256.9238	2$^-$			E_γ: Other: 352.13 *4* in 1972Sh13. I_γ: Other: 0.20 *3* in 1972Sh13.
353.6[b] *4*	0.016[b] *5*	1034.51	(1,2)$^-$	680.113	2$^-$			E_γ: Other: 353.67 *6* in γ-ray singles of 2016Be02. I_γ: Other: 0.032 *7* in γ-ray singles of 2016Be02.
353.7[b&] *5*	0.029[b] *6*	523.0435	4$^-$	169.4398	3$^-$			E_γ: Other: 353.67 *6* in γ-ray singles of 2016Be02. I_γ: Other: 0.032 *7* in γ-ray singles of 2016Be02.
354.30[&] *3*	0.086 *8*	644.98	1$^-$	290.6611	1$^-$			E_γ: Other: 354.36 *25* in 1972Sh13. I_γ: Other: 0.137 *21* in 1972Sh13.
355.70 *6*	0.027 *6*	1138.51	(3,4)$^-$	782.794	3$^-$			
[x]356.29 *3*	0.019 *5*							
358.739[&] *10*	0.251 *11*	719.633	(4,5)$^+$	360.8869	5$^+$			E_γ: Other: 358.777 *35* in 1972Sh13. I_γ: Other: 0.24 *4* in 1972Sh13.
360.423[&] *18*	0.132 *10*	723.177	2$^-$	362.721	2$^-$			E_γ: Other: 360.40 *20* in 1972Sh13. I_γ: Other: 0.153 *23* in 1972Sh13.
[x]361.73 *3*	0.032 *9*							
362.68[b] *13*	0.62[b] *4*	362.721	2$^-$	0.0	1$^-$	M1+E2	1.2 *+31−7*	E_γ: Others: 362.712 *8* in γ-ray singles of 2016Be02; 362.66 *20* in 1972Sh13. I_γ: Others: 0.513 *15* in γ-ray singles of 2016Be02; 0.76 *8* in 1972Sh13. Mult.,δ: α(K)exp=0.07 *3* (1968Su01).
362.77[b&] *8*	0.064[b] *12*	874.414	(4,5)$^+$	511.715	4$^+$			E_γ: Others: 362.712 *8* in γ-ray singles of 2016Be02; 362.66 *20* in 1972Sh13, associated with the 363-keV level. I_γ: Others: 0.513 *15* in γ-ray singles of 2016Be02; 0.76 *8* in 1972Sh13, associated with the 363-keV level.
363.15[&] *3*	0.098 *22*	680.113	2$^-$	316.9282	3$^-$			E_γ: Other: 363.04 *20* in 1972Sh13. I_γ: Other: 0.15 *4* in 1972Sh13.
[x]363.797 *15*	0.054 *11*							
366.31 *4*	0.017 *8*	1157.796	(1,2)$^-$	791.514	(2,3)$^-$			
368.93[&] *8*	0.024 *7*	708.683	5$^-$	339.947	5$^-$			E_γ: Other: 368.99 *27* in 1972Sh13. I_γ: Other: 0.037 *11* in 1972Sh13.
370.37[&] *3*	0.025 *8*	1093.517	(2,3)$^-$	723.177	2$^-$			E_γ: Other: 370.61 *27* in 1972Sh13. I_γ: Other: 0.063 *19* in 1972Sh13.
370.55[&] *7*	0.037 *7*	810.527	(3,4)$^+$	439.7533	3$^+$			E_γ: Other: 370.61 *27* in 1972Sh13. I_γ: Other: 0.063 *19* in 1972Sh13.

$^{188}_{75}Re_{113}$-20

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
372.1[b&] 5	0.020[b] 6	628.849	2⁻	256.9238	2⁻	E_γ: Others: 372.128 *22* in γ-ray singles of 2016Be02; 372.15 *20* in 1972Sh13. I_γ: Others: 0.110 *9* in γ-ray singles of 2016Be02; 0.11 *3* in 1972Sh13.
372.35[b] 13	0.063[b] 15	372.0724	3⁻	0.0	1⁻	E_γ: Others: 372.128 *22* in γ-ray singles of 2016Be02; 372.15 *20* in 1972Sh13. I_γ: Others: 0.110 *9* in γ-ray singles of 2016Be02; 0.11 *3* in 1972Sh13.
374.13[&] 7	0.013 9	1165.62	(1,2)⁻	791.514	(2,3)⁻	E_γ: Other: 374.30 *20* in 1972Sh13. I_γ: Other: 0.09 *3* in 1972Sh13.
374.2[b&] 4	0.013[b] 4	737.021	3⁻	362.721	2⁻	E_γ: Others: 374.24 *3* in γ-ray singles of 2016Be02; 374.30 *20* in 1972Sh13, but assigned to depopulate the 582-keV level. I_γ: Others: 0.078 *10* in γ-ray singles of 2016Be02; 0.09 *3* in 1972Sh13, but assigned to depopulate the 582-keV level.
374.51[b&] 4	0.047[b] 8	582.149	1⁻	207.8480	0⁺	E_γ: Other: 374.24 *3* in γ-ray singles of 2016Be02; 374.30 *20* in 1972Sh13. I_γ: Other: 0.078 *10* in γ-ray singles of 2016Be02; 0.09 *3* in 1972Sh13.
375.455[&] 11	0.431 19	558.231	4⁻	182.7504	4⁻	E_γ: Other: 375.522 *30* in 1972Sh13. I_γ: Other: 0.53 *5* in 1972Sh13.
376.49[b&] 42	0.015[b] 12	719.633	(4,5)⁺	342.5857	4⁺	E_γ: Others: 376.83 *6* in γ-ray singles of 2016Be02; 376.80 *20* in 1972Sh13, but the line is complex. I_γ: Others: 0.049 *10* in γ-ray singles of 2016Be02; 0.089 *13* in 1972Sh13, but the line is complex.
376.85[b] 18	0.042[b] 8	582.149	1⁻	205.3451	2⁻	E_γ: Other: 376.83 *6* in γ-ray singles of 2016Be02; 376.80 *20* in 1972Sh13. I_γ: Other: 0.049 *10* in γ-ray singles of 2016Be02; 0.089 *13* in 1972Sh13.
379.3[b&] 3	0.0140[b] 23	1026.22	(2,3)⁻	647.296	2⁻	E_γ: Others: 379.31 *10* in γ-ray singles of 2016Be02; 379.15 *20* in 1972Sh13, but the line is complex. I_γ: Others: 0.012 *7* in γ-ray singles of 2016Be02; 0.056 *23* in 1972Sh13.
379.87[b&] 18	0.0094[b] 23	1099.28	(3,4)⁺	719.633	(4,5)⁺	E_γ: Others: 379.31 *10* in γ-ray singles of 2016Be02; 379.15 *20* in 1972Sh13, but the line is complex. I_γ: Others: 0.012 *7* in γ-ray singles of 2016Be02; 0.056 *23* in 1972Sh13.
[x]381.78[#] 20	0.040[#] 16					
384.47 18	0.018 9	896.192	(2,3)⁺	511.715	4⁺	
385.40 3	0.030 9	748.121	(2,3)⁻	362.721	2⁻	
386.167[&] 9	0.170 18	558.231	4⁻	172.0758	6⁻	E_γ: Other: 386.21 *5* in 1972Sh13. I_γ: Other: 0.23 *4* in 1972Sh13.
388.87 9	0.013 10	558.231	4⁻	169.4398	3⁻	
389.421 24	0.190 14	680.113	2⁻	290.6611	1⁻	E_γ: Other: 389.46 *6* in 1972Sh13. I_γ: Other: 0.18 *3* in 1972Sh13.
389.77[&] 3	0.032 9	851.87	(3,4)⁻	462.0788	4⁻	E_γ: Other: 389.46 *6* in 1972Sh13, but assigned to the 680-keV level. I_γ: Other: 0.18 *3* in 1972Sh13.
390.27 9	0.009 6	647.296	2⁻	256.9238	2⁻	
393.24 4	0.018 7	1261.52	(2,3)⁻	868.352	(2,3)⁻	
393.83[&] 9	0.036 9	756.590	(1,2)⁺	362.721	2⁻	E_γ: Other: 394.08 *30* in 1972Sh13, but the line is complex. I_γ: Other: 0.053 *16* in 1972Sh13, but the line is complex.

$^{188}_{75}Re_{113}$-21

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
396.37& *4*	0.024 *8*	896.192	(2,3)$^+$	499.7354	3$^+$	E_γ: Other: 396.62 *30* in 1972Sh13. Complex line. I_γ: Other: 0.027 *8* in 1972Sh13. Complex line.
x397.39 *3*	0.028 *8*					
399.90& *3*	0.032 *9*	739.807	(4,5)$^-$	339.947	5$^-$	E_γ: Other: 399.99 *20* in 1972Sh13, but the line is complex. I_γ: Other: 0.044 *13* in 1972Sh13, but the line is complex.
400.8b *4*	0.028b *5*	871.445	(2,3)$^-$	470.144	3$^-$	E_γ: Other: 401.06 *11* in γ-ray singles of 2016Be02. I_γ: Other: 0.032 *9* in γ-ray singles of 2016Be02.
401.44b& *20*	0.035b *5*	977.10	(2,3)$^+$	575.719	3$^+$	E_γ: Other: 401.06 *11* in γ-ray singles of 2016Be02; 401.21 *30* in 1972Sh13. I_γ: Other: 0.032 *9* in γ-ray singles of 2016Be02; 0.065 *19* in 1972Sh13.
402.18 *4*	0.018 *7*	558.231	4$^-$	156.0489	3$^-$	
403.627& *23*	0.055 *10*	608.999	1$^-$	205.3451	2$^-$	E_γ: Other: 403.85 *20* in 1972Sh13. I_γ: Other: 0.056 *17* in 1972Sh13.
406.223& *18*	0.087 *13*	575.719	3$^+$	169.4398	3$^-$	
406.39b& *24*	0.011b *6*	900.211	(4,5)$^+$	493.707	4$^+$	E_γ: Others: 406.560 *12* from γ-ray singles in 2016Be02; 406.51 *7* in 1972Sh13. I_γ: Others: 0.126 *16* from γ-ray singles in 2016Be02; 0.30 *6* in 1972Sh13.
406.47b *6*	0.034b *4*	723.177	2$^-$	316.9282	3$^-$	E_γ: Other: 406.560 *12* from γ-ray singles in 2016Be02. I_γ: Other: 0.126 *16* from γ-ray singles in 2016Be02.
406.58b& *13*	0.035b *14*	470.144	3$^-$	63.5867	2$^-$	E_γ: Others: 406.560 *12* from γ-ray singles in 2016Be02; 406.51 *7* in 1972Sh13. I_γ: Others: 0.126 *16* from γ-ray singles in 2016Be02; 0.30 *6* in 1972Sh13.
407.16 *6*	0.015 *8*	750.062	(3,4,5)$^+$	342.5857	4$^+$	
408.04 *24*	0.017 *10*	1207.95	(2,3)$^-$	800.440	(2,3)$^-$	
410.85& *8*	0.053 *11*	986.62	(3,4)$^+$	575.719	3$^+$	E_γ: Other: 410.61 *22* in 1972Sh13. I_γ: Other: 0.056 *17* in 1972Sh13.
411.6b *3*	0.0129b *23*	737.021	3$^-$	325.8670	4$^-$	E_γ: Other: 411.31 *10* from γ-ray singles in 2016Be02. I_γ: Other: 0.014 *8* from γ-ray singles in 2016Be02.
412.25b *20*	0.0164b *23*	963.23	(4,5)$^+$	550.837	(4,5)$^+$	E_γ: Other: 411.31 *10* from γ-ray singles in 2016Be02. I_γ: Other: 0.014 *8* from γ-ray singles in 2016Be02.
413.387& *23*	0.051 *10*	1093.517	(2,3)$^-$	680.113	2$^-$	E_γ: Others: 413.931 *22* from γ-ray singles in 2016Be02; 413.88 *22* in 1972Sh13. I_γ: Others: 0.053 *10* from γ-ray singles in 2016Be02; 0.12 *3* in 1972Sh13.
414.03b& *12*	0.0292b *23*	739.807	(4,5)$^-$	325.8670	4$^-$	E_γ: Others: 413.931 *22* from γ-ray singles in 2016Be02; 413.88 *22* in 1972Sh13. I_γ: Others: 0.053 *10* from γ-ray singles in 2016Be02; 0.12 *3* in 1972Sh13.
414.23b *11*	0.046b *11*	896.192	(2,3)$^+$	482.1384	2$^+$	E_γ: Other: 413.931 *22* from γ-ray singles in 2016Be02. I_γ: Other: 0.053 *10* from γ-ray singles in 2016Be02.
414.5b *6*	0.009b *4*	913.816	(2,3)$^+$	499.7354	3$^+$	E_γ: Other: 413.931 *22* from γ-ray singles in 2016Be02. I_γ: Other: 0.053 *10* from γ-ray singles in 2016Be02.
415.46 *3*	0.037 *9*	1118.92	(3,4)$^+$	703.451	4$^+$	
416.75 *19*	0.005 *5*	1207.95	(2,3)$^-$	791.514	(2,3)$^-$	
419.48 *10*	0.011 *6*	810.527	(3,4)$^+$	391.37	(5,6)$^+$	
420.087& *18*	0.075 *12*	782.794	3$^-$	362.721	2$^-$	E_γ: Other: 420.19 *22* in 1972Sh13. I_γ: Other: 0.081 *24* in 1972Sh13.

$^{188}_{75}Re_{113}$-22

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
x421.377 25	0.042 9					
423.10 3	0.044 8	739.807	(4,5)$^-$	316.9282	3$^-$	
423.24 5	0.022 6	680.113	2$^-$	256.9238	2$^-$	
423.49 5	0.034 9	628.849	2$^-$	205.3451	2$^-$	E_γ: Other: 423.56 22 in 1972Sh13. I_γ: Other: 0.13 3 in 1972Sh13, but the line is complex.
425.6[b] 4	0.096[b] 14	1001.44	(2,3)$^+$	575.719	3$^+$	E_γ: Other: 425.67 4 from γ-ray singles in 2016Be02. I_γ: Other: 0.124 16 from γ-ray singles in 2016Be02.
425.67[b] 13	0.042[b] 9	1034.51	(1,2)$^-$	608.881	4$^-$	E_γ: Other: 425.67 4 from γ-ray singles in 2016Be02. I_γ: Other: 0.124 16 from γ-ray singles in 2016Be02.
425.91 5	0.044 11	656.827	(3,4)$^+$	230.9123	3$^+$	
425.95[#] 22	0.17[#] 4	582.149	1$^-$	156.0489	3$^-$	E_γ,I_γ: Complex line. Not observed in 2010Ba48 and 2016Be02.
426.73[&] 3	0.053 8	1002.486	(2,3)$^+$	575.719	3$^+$	E_γ: Other: 426.72 22 in 1972Sh13. I_γ: Other: 0.11 3 in 1972Sh13.
428.45[&] 5	0.019 9	800.440	(2,3)$^-$	372.0724	3$^-$	E_γ: Other: 428.77 22 in 1972Sh13, but the line is complex. I_γ: Other: 0.13 3 in 1972Sh13, but the line is complex.
428.73[&] 5	0.088 12	791.514	(2,3)$^-$	362.721	2$^-$	E_γ: Other: 428.77 22 in 1972Sh13. I_γ: Other: 0.13 3 in 1972Sh13.
431.675[&] 15	0.202 23	913.816	(2,3)$^+$	482.1384	2$^+$	E_γ: Other: 431.62 22 in 1972Sh13, but the line is complex. I_γ: Other: 0.20 6 in 1972Sh13.
432.13[b&] 22	0.015[b] 4	955.69	(3,4)$^-$	523.0435	4$^-$	E_γ: Others: 432.438 25 from γ-ray singles in 2016Be02; 432.29 22 in 1972Sh13, but the line is complex. I_γ: Others: 0.052 10 from γ-ray singles in 2016Be02; 0.11 3 in 1972Sh13, but the line is complex.
432.76[b&] 10	0.059[b] 5	723.177	2$^-$	290.6611	1$^-$	E_γ: Others: 432.438 25 from γ-ray singles in 2016Be02; 432.29 22 in 1972Sh13, but the line is complex. I_γ: Others: 0.052 10 from γ-ray singles in 2016Be02; 0.11 3 in 1972Sh13, but the line is complex.
434.45[&] 7	0.021 6	1137.41	(3,4)$^+$	703.451	4$^+$	E_γ: Other: 434.23 8 in 1972Sh13, but the line is complex. I_γ: Other: 0.081 24 in 1972Sh13.
435.1 3	0.015 9	897.26	(2,3)$^-$	462.0788	4$^-$	
437.2[b&] 4	0.0140[b] 23	1117.10	(1,2)$^-$	680.113	2$^-$	E_γ: Others: 437.15 3 from γ-ray singles in 2016Be02; 437.72 26 in 1972Sh13. I_γ: Others: 0.036 9 from γ-ray singles in 2016Be02; 0.23 6 in 1972Sh13, but the line is complex.
437.58[b&] 24	0.016[b] 4	644.98	1$^-$	207.8480	0$^+$	E_γ: Other: 437.15 3 from γ-ray singles in 2016Be02; 437.72 26 in 1972Sh13. I_γ: Other: 0.036 9 from γ-ray singles in 2016Be02; 0.23 6 in 1972Sh13, but the line is complex.
437.8[b&] 5	0.015[b] 7	1013.41	(2,3)$^+$	575.719	3$^+$	E_γ: Others: 437.717 12 from γ-ray singles in 2016Be02; 437.72 26 in 1972Sh13, but the line is complex. I_γ: Others: 0.148 15 from γ-ray singles in 2016Be02; 0.23 6 in 1972Sh13.
437.81[b&] 13	0.074[b] 7	754.585	(3,4)$^-$	316.9282	3$^-$	E_γ: Other: 437.717 12 from γ-ray singles in 2016Be02; 437.72 26 in 1972Sh13, but the line is complex. I_γ: Other: 0.148 15 from γ-ray singles in 2016Be02; 0.23 6 in 1972Sh13, but the line is complex.
437.83[b&] 6	0.104[b] 9	800.440	(2,3)$^-$	362.721	2$^-$	E_γ: Other: 437.717 12 from γ-ray singles in 2016Be02; 437.72 26 in 1972Sh13. I_γ: Other: 0.148 15 from γ-ray singles in 2016Be02; 0.23 6 in 1972Sh13.

$^{188}_{75}Re_{113}$-23

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
438.70 *3*	0.038 *9*	799.544	5^+	360.8869	5^+	
439.48& *7*	0.061 *10*	608.881	4^-	169.4398	3^-	E_γ: Other: 439.66 *26* in 1972Sh13. Complex line. I_γ: Other: 0.10 *3* in 1972Sh13. Complex line.
440.86& *11*	0.040 *10*	910.980	$(2,3)^-$	470.144	3^-	E_γ: Other: 440.96 *38* in 1972Sh13. I_γ: Other: 0.09 *3* in 1972Sh13.
441.47& *4*	0.026 *8*	1088.546	$(2,3,4)^-$	647.296	2^-	E_γ: Other: 441.07 *26* in 1972Sh13. I_γ: Other: 0.23 *6* in 1972Sh13.
441.97 *3*	0.127 *22*	647.296	2^-	205.3451	2^-	
442.47[b] *25*	0.023[b] *4*	924.40	$(2,3)^+$	482.1384	2^+	E_γ: Other: 442.36 *6* from γ-ray singles in 2016Be02. I_γ: Other: 0.037 *9* from γ-ray singles in 2016Be02.
442.61[b] *18*	0.034[b] *5*	965.21	$(3,4)^-$	523.0435	4^-	E_γ: Other: 442.36 *6* from γ-ray singles in 2016Be02. I_γ: Other: 0.037 *9* from γ-ray singles in 2016Be02.
444.22& *9*	0.043 *9*	734.902	$(1,2)^-$	290.6611	1^-	E_γ: Other: 444.20 *27* in 1972Sh13, but the line is complex. I_γ: Other: 0.11 *3* in 1972Sh13, but the line is complex.
449.78[b] *2*	0.216[b] *20*	810.527	$(3,4)^+$	360.8869	5^+	E_γ: Others: 449.67 *3* from γ-ray singles in 2016Be02; 449.80 *27* in 1972Sh13, but the line is complex. I_γ: Others: 0.164 *13* from γ-ray singles in 2016Be02; 0.27 *7* in 1972Sh13, but the line is complex.
449.91[b&] *7*	0.0191[b] *10*	737.021	3^-	287.1240	4^-	E_γ: Others: 449.67 *3* from γ-ray singles in 2016Be02; 449.80 *27* in 1972Sh13, but the line is complex. I_γ: From branching ratio in 2016Be02, relative to Iγ(554.26γ)=0.329 *18*. Others: 0.164 *13* from γ-ray singles in 2016Be02; 0.27 *7* in 1972Sh13, but the line is complex.
450.0[b&] *5*	0.012[b] *4*	1025.994	$(3,4)^+$	575.719	3^+	E_γ: Others: 450.272 *17* from γ-ray singles in 2016Be02; 449.80 *27* in 1972Sh13, but the line is complex. I_γ: Others: 0.092 *12* from γ-ray singles in 2016Be02; 0.27 *7* in 1972Sh13.
450.27[b] *25*	0.036[b] *6*	812.99	$(1,2)^-$	362.721	2^-	E_γ: Other: 450.272 *17* from γ-ray singles in 2016Be02. I_γ: Other: 0.092 *12* from γ-ray singles in 2016Be02.
450.43[b] *15*	0.064[b] *15*	890.225	$(3,4)^+$	439.7533	3^+	E_γ: Other: 450.272 *17* from γ-ray singles in 2016Be02. I_γ: Other: 0.092 *12* from γ-ray singles in 2016Be02.
452.81 *6*	0.059 *17*	608.881	4^-	156.0489	3^-	
453.05 *17*	0.068 *13*	899.341	$(3,4)^-$	446.341	5^-	E_γ: From γγ coin in 2016Be02.
454.25[b&] *6*	0.0713[b] *24*	807.628	$(1,2)^+$	353.5723	1^+	E_γ: Others: 454.048 *18* from γ-ray singles in 2016Be02; 454.15 *28* in 1972Sh13, but the line is complex. I_γ: Others: 0.117 *16* from γ-ray singles in 2016Be02; 0.14 *4* in 1972Sh13, but the line is complex.
454.25[b&] *15*	0.061[b] *6*	1208.85	$(4,5)^-$	754.585	$(3,4)^-$	E_γ: Others: 454.048 *18* from γ-ray singles in 2016Be02; 454.15 *28* in 1972Sh13, but the line is complex. I_γ: Others: 0.117 *16* from γ-ray singles in 2016Be02; 0.14 *4* in 1972Sh13, but the line is complex.

$^{188}_{75}Re_{113}$-24

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
454.26[b&] 5	0.032[b] 4	916.24	(3,4)$^-$	462.0788	4$^-$	E_γ: Others: 454.048 *18* from γ-ray singles in 2016Be02; 454.15 *28* in 1972Sh13, but the line is complex. I_γ: Others: 0.117 *16* from γ-ray singles in 2016Be02; 0.14 *4* in 1972Sh13, but the line is complex.
455.10 *9*	0.061 *10*	925.19	(2,3,4)$^-$	470.144	3$^-$	
455.94[b&] *20*	0.036[b] *6*	896.192	(2,3)$^+$	439.7533	3$^+$	E_γ: Others: 456.34 *8* from γ-ray singles in 2016Be02; 455.46 *40* in 1972Sh13, but the line is complex. I_γ: Others: 0.056 *9* from γ-ray singles in 2016Be02; 0.14 *4* in 1972Sh13, but the line is complex.
456.50[b&] *7*	0.070[b] *4*	756.590	(1,2)$^+$	300.2047	2$^+$	E_γ: Others: 456.34 *8* from γ-ray singles in 2016Be02; 456.46 *28* in 1972Sh13, but the line is complex. I_γ: Others: 0.056 *9* from γ-ray singles in 2016Be02; 0.14 *4* in 1972Sh13, but the line is complex.
459.46[&] *4*	0.033 *9*	523.0435	4$^-$	63.5867	2$^-$	E_γ: Other: 460.05 *28* in 1972Sh13. I_γ: Other: 0.089 *3* in 1972Sh13.
459.93[&] *8*	0.014 *8*	1088.546	(2,3,4)$^-$	628.849	2$^-$	E_γ: Other: 460.05 *28* in 1972Sh13. I_γ: Other: 0.089 *3* in 1972Sh13.
460.53 *8*	0.022 *9*	983.48	(3,4)$^-$	523.0435	4$^-$	
462.12 *22*	0.021 *10*	932.69	(2,3)$^-$	470.144	3$^-$	
463.3[b&] *5*	0.0105[b] *23*	925.19	(2,3,4)$^-$	462.0788	4$^-$	E_γ: Others: 463.41 *22* from γ-ray singles in 2016Be02; 463.64 *42* in 1972Sh13. I_γ: Others: 0.020 *10* from γ-ray singles in 2016Be02; 0.056 *17* in 1972Sh13.
463.78[b&] *20*	0.029[b] *4*	945.78	(2,3)$^+$	482.1384	2$^+$	E_γ: Others: 463.41 *22* from γ-ray singles in 2016Be02; 463.64 *42* in 1972Sh13. I_γ: Others: 0.020 *10* from γ-ray singles in 2016Be02; 0.056 *17* in 1972Sh13.
465.96[&] *4*	0.045 *10*	756.590	(1,2)$^+$	290.6611	1$^-$	E_γ: Other: 466.38 *45* in 1972Sh13. I_γ: Other: 0.09 *3* in 1972Sh13.
[x]466.42 *4*	0.037 *10*					
469.14[&] *5*	0.059 *13*	1208.85	(4,5)$^-$	739.807	(4,5)$^-$	E_γ: Other: 469.26 *28* in 1972Sh13. I_γ: Other: 0.09 *3* in 1972Sh13.
469.64[&] *5*	0.028 *9*	963.23	(4,5)$^+$	493.707	4$^+$	E_γ: Other: 469.26 *28* in 1972Sh13. I_γ: Other: 0.09 *3* in 1972Sh13.
[x]472.83 *4*	0.038 *9*					
474.2[b] *4*	0.013[b] *5*	1122.09	(3,4)$^-$	647.296	2$^-$	E_γ: Other: 474.740 *17* from γ-ray singles in 2016Be02. I_γ: Other: 0.143 *16* from γ-ray singles in 2016Be02.
474.7[b] *3*	0.027[b] *6*	791.514	(2,3)$^-$	316.9282	3$^-$	E_γ: Other: 474.740 *17* from γ-ray singles in 2016Be02. I_γ: Other: 0.143 *16* from γ-ray singles in 2016Be02.
474.90[b&] *4*	0.150[b] *26*	680.113	2$^-$	205.3451	2$^-$	E_γ: Other: 474.740 *17* from γ-ray singles in 2016Be02; 474.75 *28* in 1972Sh13. I_γ: Other: 0.143 *16* from γ-ray singles in 2016Be02; 0.22 *4* in 1972Sh13.
480.12[&] *4*	0.044 *10*	737.021	3$^-$	256.9238	2$^-$	E_γ: Other: 479.90 *30* in 1972Sh13, but the line is complex. I_γ: Other: 0.040 *16* in 1972Sh13, but the line is complex.
482.17[&] *3*	0.044 *10*	482.1384	2$^+$	0.0	1$^-$	E_γ: Other: 482.11 *45* in 1972Sh13. Questionable line. I_γ: Other: 0.024 *10* in 1972Sh13.

$^{188}_{75}Re_{113}$-25

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
483.55 *6*	0.019 *7*	977.10	(2,3)$^+$	493.707	4$^+$	
x486.09# *30*	0.040# *16*					
487.24& *5*	0.028 *8*	859.224	(2,3)$^-$	372.0724	3$^-$	E_γ: Other: 487.21 *45* in 1972Sh13, but the line is complex. I_γ: Other: 0.024 *9* in 1972Sh13.
x487.95 *4*	0.037 *9*					
488.5b& *4*	0.043b *12*	719.633	(4,5)$^+$	230.9123	3$^+$	E_γ: Others: 488.73 *4* from γ-ray singles in 2016Be02; 487.21 *45* in 1972Sh13, but the line is complex. I_γ: Others: 0.040 *10* from γ-ray singles in 2016Be02 0.024 *9* in 1972Sh13, but the line is complex.
488.7b *3*	0.019b *5*	1011.19	(2,3,4)$^-$	523.0435	4$^-$	E_γ: Other: 488.73 *4* from γ-ray singles in 2016Be02. I_γ: Other: 0.040 *10* from γ-ray singles in 2016Be02.
x490.65 *5*	0.031 *9*					
491.29& *3*	0.047 *10*	647.296	2$^-$	156.0489	3$^-$	E_γ: Other: 491.32 *45* in 1972Sh13. I_γ: Other: 0.081 *24* in 1972Sh13.
x492.31 *4*	0.046 *10*					
492.8b *1*	0.052b *5*	854.357	(4,5)$^+$	360.8869	5$^+$	E_γ: Uncertainty assigned by the evaluator.
493.04b& *6*	0.096b *4*	986.62	(3,4)$^+$	493.707	4$^+$	E_γ: Other: 492.933 *19* from γ-ray singles in 2016Be02; 493.05 *30* in 1972Sh13. I_γ: Other: 0.118 *14* from γ-ray singles in 2016Be02; 0.15 *4* in 1972Sh13.
493.48b& *9*	0.0234b *23*	955.69	(3,4)$^-$	462.0788	4$^-$	E_γ: Others: 492.933 *19* from γ-ray singles in 2016Be02; 433.05 *30* in 1972Sh13, but associated with the 557-keV level. I_γ: Others: 0.118 *14* from γ-ray singles in 2016Be02; 0.15 *4* in 1972Sh13.
494.85b *20*	0.030b *5*	1070.57	(2,3)$^+$	575.719	3$^+$	E_γ: Other: 494.70 *4* from γ-ray singles in 2016Be02. I_γ: Other: 0.044 *9* from γ-ray singles in 2016Be02.
494.96b *16*	0.041b *9*	977.10	(2,3)$^+$	482.1384	2$^+$	E_γ: Other: 494.70 *4* from γ-ray singles in 2016Be02. I_γ: Other: 0.044 *9* from γ-ray singles in 2016Be02.
496.48& *3*	0.058 *10*	859.224	(2,3)$^-$	362.721	2$^-$	E_γ: Other: 496.41 *50* in 1972Sh13, but the line is complex. I_γ: Other: 0.027 *11* in 1972Sh13.
498.77 *5*	0.057 *19*	890.225	(3,4)$^+$	391.37	(5,6)$^+$	
499.1b& *3*	0.028b *5*	1146.7	(2)$^-$	647.296	2$^-$	E_γ: Others: 498.94 *4* from γ-ray singles in 2016Be02; 499.30 *38* in 1972Sh13. I_γ: Other: 0.130 *20* from γ-ray singles in 2016Be02; 0.16 *5* in 1972Sh13.
499.38b& *7*	0.163b *8*	871.445	(2,3)$^-$	372.0724	3$^-$	E_γ: Others: 498.94 *4* from γ-ray singles in 2016Be02; 499.30 *38* in 1972Sh13. I_γ: Others: 0.130 *20* from γ-ray singles in 2016Be02; 0.16 *5* in 1972Sh13.
499.61& *4*	0.133 *20*	756.590	(1,2)$^+$	256.9238	2$^-$	E_γ: Other: 499.30 *38* in 1972Sh13. I_γ: Other: 0.16 *5* in 1972Sh13.
500.1b& *3*	0.019b *4*	1075.60	(3,4)$^+$	575.719	3$^+$	E_γ: Others: 500.75 *6* in γ-ray singles of 2016Be02; 500.74 *38* in 1972Sh13. I_γ: Others: 0.110 *13* in γ-ray singles of 2016Be02; 0.11 *3* in 1972Sh13.
500.39b& *25*	0.013b *7*	994.026	(3,4)$^+$	493.707	4$^+$	E_γ: Others: 500.75 *6* in γ-ray singles of 2016Be02; 500.74 *38* in 1972Sh13. I_γ: Others: 0.110 *13* in γ-ray singles of 2016Be02; 0.11 *3* in 1972Sh13.
501.01b& *10*	0.067b *5*	791.514	(2,3)$^-$	290.6611	1$^-$	E_γ: Others: 500.75 *6* in γ-ray singles of 2016Be02; 500.74 *38* in 1972Sh13. I_γ: Others: 0.110 *13* in γ-ray singles of 2016Be02; 0.11 *3* in 1972Sh13.

$^{188}_{75}Re_{113}$-26

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
501.64 *5*	0.038 *10*	1013.41	$(2,3)^+$	511.715	4^+	
502.03 *7*	0.024 *9*	1001.44	$(2,3)^+$	499.7354	3^+	
x503.19 *5*	0.029 *8*					
504.43& *4*	0.036 *9*	986.62	$(3,4)^+$	482.1384	2^+	E_γ: Other: 504.34 *55* in 1972Sh13. I_γ: Other: 0.040 *12* in 1972Sh13.
x506.04 *5*	0.034 *9*					
507.394& *25*	0.090 *13*	807.628	$(1,2)^+$	300.2047	2^+	E_γ: Other: 507.55 *38* in 1972Sh13. I_γ: Other: 0.11 *3* in 1972Sh13.
508.19 *5*	0.039 *11*	1117.10	$(1,2)^-$	608.881	4^-	
509.2 *6*	0.078 *16*	1002.486	$(2,3)^+$	493.707	4^+	E_γ: From $\gamma\gamma$ coin in 2016Be02.
515.94 *11*	0.014 *8*	1039.04	$(3,4)^-$	523.0435	4^-	
x517.23 *3*	0.068 *13*					
517.78 *4*	0.047 *11*	723.177	2^-	205.3451	2^-	
518.2b& *4*	0.015b *6*	1165.62	$(1,2)^-$	647.296	2^-	E_γ: Other: 518.57 *4* in γ-ray singles of 2016Be02; 518.6 *4* in 1972Sh13. I_γ: Other: 0.142 *25* in γ-ray singles of 2016Be02; 0.20 *6* in 1972Sh13.
518.61b *15*	0.255b *14*	582.149	1^-	63.5867	2^-	E_γ: Other: 518.57 *4* in γ-ray singles of 2016Be02; 518.6 *4* in 1972Sh13. I_γ: Other: 0.142 *25* in γ-ray singles of 2016Be02; 0.20 *6* in 1972Sh13.
519.22 *3*	0.060 *12*	1001.44	$(2,3)^+$	482.1384	2^+	
520.41 *4*	0.051 *10*	1002.486	$(2,3)^+$	482.1384	2^+	
522.33& *3*	0.062 *11*	812.99	$(1,2)^-$	290.6611	1^-	E_γ: Other: 522.47 *58* in 1972Sh13, but the line is questionable. I_γ: Other: 0.089 *27* in 1972Sh13.
523.9b& *3*	0.020b *4*	1261.52	$(2,3)^-$	737.021	3^-	E_γ: Others: 523.99 *3* in γ-ray singles of 2016Be02; 524.05 *58* in 1972Sh13. I_γ: Others: 0.071 *11* in γ-ray singles of 2016Be02; 0.09 *3* in 1972Sh13.
524.16b& *15*	0.097b *20*	680.113	2^-	156.0489	3^-	E_γ: Other: 523.99 *3* in γ-ray singles of 2016Be02; 524.05 *58* in 1972Sh13. I_γ: Other: 0.071 *11* in γ-ray singles of 2016Be02; 0.09 *3* in 1972Sh13.
525.90b& *14*	0.046b *5*	756.590	$(1,2)^+$	230.9123	3^+	E_γ: Others: 525.74 *7* in γ-ray singles of 2016Be02; 525.69 *58* in 1972Sh13, but the line is in question. I_γ: Others: 0.066 *16* in γ-ray singles of 2016Be02; 0.56 *17* in 1972Sh13, but the line is in question.
526.1b *4*	0.0094b *23*	851.87	$(3,4)^-$	325.8670	4^-	E_γ: Other: 525.74 *7* in γ-ray singles of 2016Be02. I_γ: Other: 0.066 *16* in γ-ray singles of 2016Be02.
528.70 *7*	0.020 *8*	1157.796	$(1,2)^-$	628.849	2^-	
529.42b& *6*	0.0690b *23*	890.225	$(3,4)^+$	360.8869	5^+	E_γ: Others: 529.37 *5* in γ-ray singles of 2016Be02; 529.21 *58* in 1972Sh13, but the line is complex. I_γ: Others: 0.040 *9* in γ-ray singles of 2016Be02; 0.40 *12* in 1972Sh13, but the line is complex.
529.85b& *22*	0.027b *4*	734.902	$(1,2)^-$	205.3451	2^-	E_γ: Others: 529.37 *5* in γ-ray singles of 2016Be02; 529.21 *58* in 1972Sh13, but the line is complex. I_γ: Others: 0.040 *9* in γ-ray singles of 2016Be02; 0.40 *12* in 1972Sh13, but the line is complex.
x531.03 *5*	0.030 *9*					
531.79 *11*	0.011 *7*	1013.41	$(2,3)^+$	482.1384	2^+	
x534.35 *7*	0.025 *8*					

$^{188}_{75}Re_{113}$-27

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
x535.98 5	0.036 9					
537.22& 6	0.092 19	977.10	(2,3)$^+$	439.7533	3$^+$	E_γ: Other: 537.39 40 in 1972Sh13. I_γ: Other: 0.09 3 in 1972Sh13.
537.68& 8	0.022 8	1000.37	(2,3)$^-$	462.0788	4$^-$	E_γ: Other: 537.39 40 in 1972Sh13. I_γ: Other: 0.09 3 in 1972Sh13.
539.33 6	0.023 8	900.211	(4,5)$^+$	360.8869	5$^+$	
541.11 5	0.036 9	831.826	2$^-$	290.6611	1$^-$	
542.3b& 7	0.0047b 11	859.224	(2,3)$^-$	316.9282	3$^-$	E_γ: Others: 542.05 4 in γ-ray singles of 2016Be02; 542.97 40 in 1972Sh13, but the line is complex. I_γ: Others: 0.047 10 in γ-ray singles of 2016Be02; 0.97 29 in 1972Sh13.
542.54b& 16	0.053b 6	914.23	(2,3)$^-$	372.0724	3$^-$	E_γ: Others: 542.05 4 in γ-ray singles of 2016Be02; 542.97 40 in 1972Sh13, but the line is complex. I_γ: Others: 0.047 10 in γ-ray singles of 2016Be02; 0.97 29 in 1972Sh13.
542.86b& 14	0.0152b 12	896.192	(2,3)$^+$	353.5723	1$^+$	E_γ: Others: 542.87 3 in γ-ray singles of 2016Be02; 542.97 40 in 1972Sh13, but the line is complex. I_γ: Others: 0.082 12 in γ-ray singles of 2016Be02; 0.97 29 in 1972Sh13.
542.91b& 10	0.064b 4	748.121	(2,3)$^-$	205.3451	2$^-$	E_γ: Others: 542.87 3 in γ-ray singles of 2016Be02; 542.97 40 in 1972Sh13, but the line is complex. I_γ: Others: 0.082 12 in γ-ray singles of 2016Be02; 0.97 29 in 1972Sh13.
543.30b 9	0.066b 4	1118.92	(3,4)$^+$	575.719	3$^+$	E_γ: Other: 542.87 3 in γ-ray singles of 2016Be02. I_γ: Other: 0.082 12 in γ-ray singles of 2016Be02.
543.56 9	0.020 8	1025.994	(3,4)$^+$	482.1384	2$^+$	
545.36 3	0.059 10	608.999	1$^-$	63.5867	2$^-$	
547.56 5	0.045 10	890.225	(3,4)$^+$	342.5857	4$^+$	
548.48& 3	0.099 13	910.980	(2,3)$^-$	362.721	2$^-$	E_γ: Other: 548.86 40 in 1972Sh13. I_γ: Other: 0.13 4 in 1972Sh13.
549.30& 3	0.070 11	754.585	(3,4)$^-$	205.3451	2$^-$	E_γ: Other: 548.86 40 in 1972Sh13. I_γ: Other: 0.13 4 in 1972Sh13.
551.39 14	0.043 17	868.352	(2,3)$^-$	316.9282	3$^-$	
552.13 8	0.024 8	924.10	(2,3)$^-$	372.0724	3$^-$	
554.26b& 9	0.329b 18	737.021	3$^-$	182.7504	4$^-$	E_γ: Others: 554.255 22 in γ-ray singles of 2016Be02; 554.43 40 in 1972Sh13. I_γ: Others: 0.38 3 in γ-ray singles of 2016Be02; 0.22 6 in 1972Sh13.
554.54b& 11	0.058b 5	994.026	(3,4)$^+$	439.7533	3$^+$	E_γ: Others: 554.255 22 in γ-ray singles of 2016Be02; 554.43 40 in 1972Sh13. I_γ: Others: 0.38 3 in γ-ray singles of 2016Be02; 0.22 6 in 1972Sh13.
557.09& 5	0.13 3	739.807	(4,5)$^-$	182.7504	4$^-$	E_γ: Other: 557.35 40 in 1972Sh13, but assigned to depopulate the 556-keV level. I_γ: Other: 0.14 4 in 1972Sh13, but assigned to depopulate the 556-keV level.
559.46& 8	0.021 8	899.341	(3,4)$^-$	339.947	5$^-$	E_γ: Other: 560.8 4 in 1972Sh13. I_γ: Other: 0.065 19 in 1972Sh13.
560.68b 9	0.061b 6	932.69	(2,3)$^-$	372.0724	3$^-$	E_γ: Other: 560.37 22 in γ-ray singles of 2016Be02. I_γ: Other: 0.052 15 in γ-ray singles of 2016Be02.

$^{188}_{75}Re_{113}$-28

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
561.93[b] *20*	0.034[b] *5*	1137.41	$(3,4)^+$	575.719	3^+	E_γ: Other: 560.37 *22* in γ-ray singles of 2016Be02. I_γ: Other: 0.052 *15* in γ-ray singles of 2016Be02.
562.41 *5*	0.064 *13*	925.19	$(2,3,4)^-$	362.721	2^-	
565.3[b&] *3*	0.108[b] *12*	628.849	2^-	63.5867	2^-	E_γ: Other: 565.45 *6* in γ-ray singles of 2016Be02; 565.8 *7* in 1972Sh13. I_γ: Other: 0.227 *21* in γ-ray singles of 2016Be02; 0.19 *6* in 1972Sh13.
565.3[b&] *9*	0.011[b] *4*	1026.22	$(2,3)^-$	462.0788	4^-	E_γ: Others: 565.45 *6* in γ-ray singles of 2016Be02; 565.80 *65* in 1972Sh13. I_γ: Others: 0.227 *21* in γ-ray singles of 2016Be02; 0.19 *6* in 1972Sh13.
565.56[b&] *10*	0.127[b] *5*	822.803	$(1,2)^-$	256.9238	2^-	E_γ: Others: 565.45 *6* in γ-ray singles of 2016Be02; 565.80 *65* in 1972Sh13. I_γ: Others: 0.227 *21* in γ-ray singles of 2016Be02; 0.19 *6* in 1972Sh13.
565.6[b&] *5*	0.019[b] *6*	1035.37	$(3,4)^-$	470.144	3^-	E_γ: Others: 565.45 *6* in γ-ray singles of 2016Be02; 565.80 *65* in 1972Sh13. I_γ: Others: 0.227 *21* in γ-ray singles of 2016Be02; 0.19 *6* in 1972Sh13.
567.07 *5*	0.046 *10*	883.83	$(2,3)^-$	316.9282	3^-	
568.62[b] *21*	0.0222[b] *12*	859.224	$(2,3)^-$	290.6611	1^-	E_γ: Other: 568.48 *9* in γ-ray singles of 2016Be02. I_γ: Other: 0.067 *18* in γ-ray singles of 2016Be02.
568.8[b] *6*	0.022[b] *6*	1039.04	$(3,4)^-$	470.144	3^-	E_γ: Other: 568.48 *9* in γ-ray singles of 2016Be02. I_γ: Other: 0.067 *18* in γ-ray singles of 2016Be02.
570.03 *7*	0.034 *9*	932.69	$(2,3)^-$	362.721	2^-	
571.47[b] *13*	0.041[b] *4*	932.41	$(4,5)^+$	360.8869	5^+	E_γ: Other: 571.59 *4* in γ-ray singles of 2016Be02. I_γ: Other: 0.057 *11* in γ-ray singles of 2016Be02.
571.54[b] *21*	0.025[b] *4*	897.26	$(2,3)^-$	325.8670	4^-	E_γ: Other: 571.59 *4* in γ-ray singles of 2016Be02. I_γ: Other: 0.057 *11* in γ-ray singles of 2016Be02.
572.10[b] *23*	0.034[b] *11*	754.585	$(3,4)^-$	182.7504	4^-	E_γ: Other: 571.59 *4* in γ-ray singles of 2016Be02. I_γ: Other: 0.057 *11* in γ-ray singles of 2016Be02.
572.4[b] *7*	0.00468[b] *11*	859.224	$(2,3)^-$	287.1240	4^-	E_γ: Other: 571.59 *4* in γ-ray singles of 2016Be02. I_γ: Other: 0.057 *11* in γ-ray singles of 2016Be02.
573.26 *8*	0.027 *9*	1035.37	$(3,4)^-$	462.0788	4^-	
573.90 *6*	0.043 *9*	1013.41	$(2,3)^+$	439.7533	3^+	
575.4[b] *6*	0.0094[b] *23*	1157.796	$(1,2)^-$	582.149	1^-	E_γ: Other: 575.30 *22* in γ-ray singles of 2016Be02. I_γ: Other: 0.061 *17* in γ-ray singles of 2016Be02.
575.57[b] *19*	0.058[b] *9*	745.21	$(3,4)^-$	169.4398	3^-	E_γ: Other: 575.30 *22* in γ-ray singles of 2016Be02. I_γ: Other: 0.061 *17* in γ-ray singles of 2016Be02.
577.46[&] *3*	0.109 *14*	782.794	3^-	205.3451	2^-	E_γ: Other: 577.96 *70* in 1972Sh13. I_γ: Other: 0.10 *3* in 1972Sh13.
579.543 *19*	0.201 *18*	810.527	$(3,4)^+$	230.9123	3^+	
580.32[&] *4*	0.062 *11*	897.26	$(2,3)^-$	316.9282	3^-	E_γ: Other: 580.50 *70* in 1972Sh13. I_γ: Other: 0.30 *9* in 1972Sh13.
[x]581.34 *4*	0.068 *12*					
581.9[b] *3*	0.087[b] *9*	582.149	1^-	0.0	1^-	E_γ: Other: 581.77 *14* in γ-ray singles of 2016Be02. I_γ: Other: 0.122 *20* in γ-ray singles of 2016Be02.
581.92[b] *25*	0.032[b] *7*	944.25	$(1,2)^-$	362.721	2^-	E_γ: Other: 581.77 *14* in γ-ray singles of 2016Be02. I_γ: Other: 0.122 *20* in γ-ray singles of 2016Be02.

$^{188}_{75}Re_{113}$-29

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
x582.24 4	0.065 12					
583.64 b 19	0.078 b 9	1106.26	(3,4)$^-$	523.0435	4$^-$	E_γ: Other: 583.78 4 in γ-ray singles of 2016Be02. I_γ: Other: 0.063 11 in γ-ray singles of 2016Be02.
583.7 b 4	0.050 b 9	647.296	2$^-$	63.5867	2$^-$	E_γ: Other: 583.78 4 in γ-ray singles of 2016Be02. I_γ: Other: 0.063 11 in γ-ray singles of 2016Be02.
586.25 b& 5	0.096 b 6	791.514	(2,3)$^-$	205.3451	2$^-$	E_γ: Other: 586.16 5 in γ-ray singles of 2016Be02; 586.7 7 in 1972Sh13. I_γ: Other: 0.145 22 in γ-ray singles of 2016Be02; 0.12 4 in 1972Sh13.
586.5 b& 3	0.029 b 6	1025.994	(3,4)$^+$	439.7533	3$^+$	E_γ: Others: 586.16 5 in γ-ray singles of 2016Be02; 586.7 7 in 1972Sh13. I_γ: Others: 0.145 22 in γ-ray singles of 2016Be02; 0.12 4 in 1972Sh13.
x587.01 7	0.032 9					
588.7 b 3	0.028 b 5	1070.57	(2,3)$^+$	482.1384	2$^+$	
589.48 24	0.056 17	745.21	(3,4)$^-$	156.0489	3$^-$	
590.26 b 11	0.065 b 9	1247.10	(3,4)$^+$	656.827	(3,4)$^+$	E_γ: Other: 589.99 6 in γ-ray singles of 2016Be02. I_γ: Other: 0.045 10 in γ-ray singles of 2016Be02.
590.3 b 6	0.018 b 4	1083.63	(3,4)$^+$	493.707	4$^+$	E_γ: Other: 589.99 6 in γ-ray singles of 2016Be02. I_γ: Other: 0.045 10 in γ-ray singles of 2016Be02.
x592.17 6	0.043 10					
594.08 7	0.031 9	910.980	(2,3)$^-$	316.9282	3$^-$	
595.83& 5	0.059 11	896.192	(2,3)$^+$	300.2047	2$^+$	E_γ: Other: 596.03 70 in 1972Sh13. I_γ: Other: 0.15 5 in 1972Sh13.
599.14& 7	0.039 10	916.24	(3,4)$^-$	316.9282	3$^-$	E_γ: Other: 599.93 74 in 1972Sh13, but the line is complex. I_γ: Other: 0.15 5 in 1972Sh13, but the line is complex.
599.80& 4	0.080 13	807.628	(1,2)$^+$	207.8480	0$^+$	E_γ: Other: 599.93 74 in 1972Sh13, but the line is complex. I_γ: Other: 0.15 5 in 1972Sh13, but the line is complex.
602.19 b& 9	0.074 b 4	859.224	(2,3)$^-$	256.9238	2$^-$	E_γ: Others: 602.302 22 in γ-ray singles of 2016Be02; 602.57 74 in 1972Sh13, but the line is complex. I_γ: Others: 0.185 17 in γ-ray singles of 2016Be02; 0.32 10 in 1972Sh13.
602.29 b& 16	0.0281 b 23	963.23	(4,5)$^+$	360.8869	5$^+$	E_γ: Others: 602.302 22 in γ-ray singles of 2016Be02; 602.57 74 in 1972Sh13, but the line is complex. I_γ: Others: 0.185 17 in γ-ray singles of 2016Be02; 0.32 10 in 1972Sh13, but the line is complex.
602.45 b& 8	0.82 b 8	807.628	(1,2)$^+$	205.3451	2$^-$	E_γ: Others: 602.302 22 in γ-ray singles of 2016Be02; 602.57 74 in 1972Sh13, but the line is complex. I_γ: Others: 0.185 17 in γ-ray singles of 2016Be02; 0.32 10 in 1972Sh13, but the line is complex.
x605.15 5	0.054 11					
605.59 23	0.073 17	1099.28	(3,4)$^+$	493.707	4$^+$	
x606.19 5	0.049 11					
607.64 9	0.090 20	812.99	(1,2)$^-$	205.3451	2$^-$	
608.35 7	0.057 13	925.19	(2,3,4)$^-$	316.9282	3$^-$	

$^{188}_{75}Re_{113}$-30

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
608.986 *20*	0.248 *21*	608.999	1^-	0.0	1^-	E_γ: Other: 609.23 *50* in 1972Sh13. I_γ: Other: 0.58 *17* in 1972Sh13.
611.3[b] *3*	0.039[b] *8*	983.48	$(3,4)^-$	372.0724	3^-	E_γ: Other: 611.64 *23* in γ-ray singles of 2016Be02. I_γ: Other: 0.070 *19* in γ-ray singles of 2016Be02.
611.65[b] *21*	0.021[b] *4*	868.352	$(2,3)^-$	256.9238	2^-	E_γ: Other: 611.64 *23* in γ-ray singles of 2016Be02. I_γ: Other: 0.070 *19* in γ-ray singles of 2016Be02.
612.26[b] *23*	0.00643[b] *21*	1082.00	$(2,3)^-$	470.144	3^-	E_γ: Other: 611.64 *23* in γ-ray singles of 2016Be02. I_γ: Other: 0.070 *19* in γ-ray singles of 2016Be02.
[x]614.37 *9*	0.030 *10*					
615.11[&] *18*	0.087 *19*	871.445	$(2,3)^-$	256.9238	2^-	E_γ: Other: 615.7 *8* in 1972Sh13, but the line is complex. I_γ: Other: 0.16 *5* in 1972Sh13.
[x]616.50 *5*	0.065 *12*					
[x]618.49 *9*	0.034 *10*					
620.78 *10*	0.030 *10*	963.23	$(4,5)^+$	342.5857	4^+	
623.33[b] *14*	0.054[b] *9*	1093.517	$(2,3)^-$	470.144	3^-	E_γ: Other: 623.34 *5* in γ-ray singles of 2016Be02. I_γ: Other: 0.066 *13* in γ-ray singles of 2016Be02.
623.38[b] *11*	0.032[b] *8*	1232.28	$(2,3)^-$	608.881	4^-	E_γ: Other: 623.34 *5* in γ-ray singles of 2016Be02. I_γ: Other: 0.066 *13* in γ-ray singles of 2016Be02.
626.58[b&] *3*	0.210[b] *9*	831.826	2^-	205.3451	2^-	E_γ: Other: 626.38 *6* in γ-ray singles of 2016Be02; 626.55 *50* in 1972Sh13. I_γ: Other: 0.34 *3* in γ-ray singles of 2016Be02; 0.52 *13* in 1972Sh13.
626.62[b&] *10*	0.055[b] *4*	883.83	$(2,3)^-$	256.9238	2^-	E_γ: Others: 626.38 *6* in γ-ray singles of 2016Be02; 626.55 *50* in 1972Sh13. I_γ: Others: 0.34 *3* in γ-ray singles of 2016Be02; 0.52 *13* in 1972Sh13.
628.86 *5*	0.065 *13*	628.849	2^-	0.0	1^-	
630.07 *6*	0.060 *13*	955.69	$(3,4)^-$	325.8670	4^-	
630.81 *6*	0.060 *13*	1070.57	$(2,3)^+$	439.7533	3^+	
[x]634.98 *4*	0.089 *11*					
638.22 *23*	0.074 *18*	955.69	$(3,4)^-$	316.9282	3^-	
641.05 *6*	0.056 *12*	810.527	$(3,4)^+$	169.4398	3^-	
642.29 *17*	0.015 *9*	932.69	$(2,3)^-$	290.6611	1^-	
643.68 *12*	0.025 *12*	1083.63	$(3,4)^+$	439.7533	3^+	
644.99 *7*	0.053 *12*	644.98	1^-	0.0	1^-	
646.64[b&] *7*	0.066[b] *5*	851.87	$(3,4)^-$	205.3451	2^-	E_γ: Others: 646.53 *5* in γ-ray singles of 2016Be02; 646.64 *60* in 1972Sh13. I_γ: Others: 0.070 *14* in γ-ray singles of 2016Be02; 0.18 *5* in 1972Sh13.
646.9[b&] *3*	0.020[b] *4*	1204.74	$(3,4)^-$	558.231	4^-	E_γ: Others: 646.53 *5* in γ-ray singles of 2016Be02; 646.64 *60* in 1972Sh13. I_γ: Others: 0.070 *14* in γ-ray singles of 2016Be02; 0.18 *5* in 1972Sh13.
647.29 *8*	0.045 *11*	647.296	2^-	0.0	1^-	
650.20 *9*	0.030 *10*	1208.85	$(4,5)^-$	558.231	4^-	
652.37 *10*	0.030 *10*	1261.52	$(2,3)^-$	608.881	4^-	
653.9 *3*	0.058 *17*	944.25	$(1,2)^-$	290.6611	1^-	
654.50 *10*	0.046 *15*	997.09	$(3,4)^+$	342.5857	4^+	
659.5[b] *6*	0.012[b] *5*	890.225	$(3,4)^+$	230.9123	3^+	E_γ: Other: 659.69 *16* in γ-ray singles of 2016Be02. I_γ: Other: 0.056 *16* in γ-ray singles of 2016Be02.

$^{188}_{75}Re_{113}$-31

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
660.01[b] *15*	0.062[b] *6*	1183.04	(3,4)$^-$	523.0435	4$^-$	E_γ: Other: 659.69 *16* in γ-ray singles of 2016Be02. I_γ: Other: 0.056 *16* in γ-ray singles of 2016Be02.
662.7[b] *3*	0.018[b] *4*	1108.62	(3,4)$^-$	446.341	5$^-$	E_γ: Other: 662.86 *8* in γ-ray singles of 2016Be02. I_γ: Other: 0.281 *24* in γ-ray singles of 2016Be02.
663.01[b&] *2*	0.265[b] *4*	868.352	(2,3)$^-$	205.3451	2$^-$	E_γ: Others: 662.86 *8* in γ-ray singles of 2016Be02; 662.9 *6* in 1972Sh13. I_γ: Others: 0.281 *24* in γ-ray singles of 2016Be02; 0.37 *11* in 1972Sh13.
663.8[b] *3*	0.009[b] *4*	1026.22	(2,3)$^-$	362.721	2$^-$	E_γ: Other: 662.86 *8* in γ-ray singles of 2016Be02. I_γ: Other: 0.281 *24* in γ-ray singles of 2016Be02.
[x]665.96[#] *90*	0.19[#] *6*					
666.12[b] *25*	0.034[b] *4*	1224.30	(3,4)$^-$	558.231	4$^-$	E_γ: Other: 666.39 *16* in γ-ray singles of 2016Be02. I_γ: Other: 0.135 *19* in γ-ray singles of 2016Be02.
666.7[b] *4*	0.046[b] *12*	1039.04	(3,4)$^-$	372.0724	3$^-$	E_γ: Other: 666.39 *16* in γ-ray singles of 2016Be02. I_γ: Other: 0.135 *19* in γ-ray singles of 2016Be02.
667.14[b] *7*	0.074[b] *4*	924.10	(2,3)$^-$	256.9238	2$^-$	E_γ: Other: 666.39 *16* in γ-ray singles of 2016Be02. I_γ: Other: 0.135 *19* in γ-ray singles of 2016Be02.
669.25[b] *20*	0.088[b] *8*	851.87	(3,4)$^-$	182.7504	4$^-$	E_γ: Other: 669.08 *8* in γ-ray singles of 2016Be02. I_γ: Other: 0.108 *20* in γ-ray singles of 2016Be02.
671.5[b] *4*	0.027[b] *7*	1188.32	(4)$^-$	516.237	5$^-$	E_γ: Other: 669.08 *8* in γ-ray singles of 2016Be02. I_γ: Other: 0.108 *20* in γ-ray singles of 2016Be02.
672.98[&] *6*	0.200 *22*	1012.96	(4)$^-$	339.947	5$^-$	E_γ: Other: 673.0 *9* in 1972Sh13. I_γ: Other: 0.19 *6* in 1972Sh13.
673.64[&] *13*	0.047 *17*	737.021	3$^-$	63.5867	2$^-$	E_γ: Other: 673.0 *9* in 1972Sh13. I_γ: Other: 0.19 *6* in 1972Sh13.
675.44 *15*	0.031 *14*	932.69	(2,3)$^-$	256.9238	2$^-$	
676.07[b&] *22*	0.037[b] *5*	1039.04	(3,4)$^-$	362.721	2$^-$	E_γ: Others: 676.36 *8* in γ-ray singles of 2016Be02; 676.21 *90* in 1972Sh13, but the line is complex. I_γ: Others: 0.127 *19* in γ-ray singles of 2016Be02; 0.12 *4* in 1972Sh13.
676.42[b&] *11*	0.0666[b] *23*	859.224	(2,3)$^-$	182.7504	4$^-$	E_γ: Others: 676.36 *8* in γ-ray singles of 2016Be02; 676.21 *90* in 1972Sh13, but the line is complex. I_γ: Others: 0.127 *19* in γ-ray singles of 2016Be02; 0.12 *4* in 1972Sh13.
676.64[b&] *25*	0.028[b] *4*	1138.51	(3,4)$^-$	462.0788	4$^-$	E_γ: Others: 676.36 *8* in γ-ray singles of 2016Be02; 676.21 *90* in 1972Sh13, but the line is complex. I_γ: Others: 0.127 *19* in γ-ray singles of 2016Be02; 0.12 *4* in 1972Sh13.
678.18 *9*	0.057 *16*	965.21	(3,4)$^-$	287.1240	4$^-$	
682.38 *13*	0.041 *15*	851.87	(3,4)$^-$	169.4398	3$^-$	
683.63[b&] *7*	0.044[b] *8*	1000.37	(2,3)$^-$	316.9282	3$^-$	E_γ: Others: 683.80 *16* in γ-ray singles of 2016Be02; 684.2 *9* in 1972Sh13. I_γ: Others: 0.158 *24* in γ-ray singles of 2016Be02; 0.25 *8* in 1972Sh13.
683.72[b&] *12*	0.060[b] *5*	1025.994	(3,4)$^+$	342.5857	4$^+$	E_γ: Others: 683.80 *16* in γ-ray singles of 2016Be02; 684.2 *9* in 1972Sh13. I_γ: Others: 0.158 *24* in γ-ray singles of 2016Be02; 0.25 *8* in 1972Sh13.
683.9[b&] *3*	0.021[b] *4*	1242.33	(3,4)$^-$	558.231	4$^-$	E_γ: Others: 683.80 *16* in γ-ray singles of 2016Be02; 684.2 *9* in 1972Sh13. I_γ: Others: 0.158 *24* in γ-ray singles of 2016Be02; 0.25 *8* in 1972Sh13.

$^{188}_{75}Re_{113}$-32

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
687.33 *17*	0.026 *14*	944.25	$(1,2)^-$	256.9238	2^-	
689.98 *11*	0.044 *16*	859.224	$(2,3)^-$	169.4398	3^-	
691.93 *19*	0.102 *18*	897.26	$(2,3)^-$	205.3451	2^-	
693.03& *20*	0.024 *14*	1208.85	$(4,5)^-$	516.237	5^-	E_γ: Other: 694.1 *10* in 1972Sh13, but the line is complex. I_γ: Other: 0.20 *6* in 1972Sh13.
694.42& *15*	0.060 *17*	1448.17	$(3,4)^-$	754.585	$(3,4)^-$	E_γ: Other: 694.1 *10* in 1972Sh13, but the line is complex. I_γ: Other: 0.20 *6* in 1972Sh13.
696.29b *5*	0.0879b *23*	983.48	$(3,4)^-$	287.1240	4^-	E_γ: Other: 696.11 *11* in γ-ray singles of 2016Be02. I_γ: Other: 0.097 *24* in γ-ray singles of 2016Be02.
697.4b *4*	0.0059b *12*	1143.73	$(3,4)^-$	446.341	5^-	E_γ: Other: 696.11 *11* in γ-ray singles of 2016Be02. I_γ: Other: 0.097 *24* in γ-ray singles of 2016Be02.
700.6b& *6*	0.0152b *23*	1026.22	$(2,3)^-$	325.8670	4^-	E_γ: Others: 701.85 *4* in γ-ray singles of 2016Be02; 701.4 *10* in 1972Sh13. I_γ: Others: 0.274 *22* in γ-ray singles of 2016Be02; 0.34 *10* in 1972Sh13.
701.79b& *8*	0.288b *15*	884.52	$(3,4)^-$	182.7504	4^-	E_γ: Others: 701.85 *4* in γ-ray singles of 2016Be02; 701.4 *10* in 1972Sh13. I_γ: Others: 0.274 *22* in γ-ray singles of 2016Be02; 0.34 *10* in 1972Sh13.
702.0b *4*	0.021b *5*	932.41	$(4,5)^+$	230.9123	3^+	E_γ: Other: 701.85 *4* in γ-ray singles of 2016Be02. I_γ: Other: 0.274 *22* in γ-ray singles of 2016Be02.
702.5b *3*	0.027b *4*	1063.33	$(3,4)^+$	360.8869	5^+	E_γ: Other: 702.75 *10* in γ-ray singles of 2016Be02. I_γ: Other: 0.064 *18* in γ-ray singles of 2016Be02.
703.4b *7*	0.0041b *8*	859.224	$(2,3)^-$	156.0489	3^-	E_γ: Other: 702.75 *10* in γ-ray singles of 2016Be02. I_γ: Other: 0.064 *18* in γ-ray singles of 2016Be02.
707.7 *3*	0.024 *15*	1224.30	$(3,4)^-$	516.237	5^-	
709.1b& *4*	0.009b *4*	1433.56	$(2,3)^-$	723.177	2^-	E_γ: Others: 710.00 *8* in γ-ray singles of 2016Be02; 709.6 *10* in 1972Sh13. I_γ: Others: 0.141 *18* in γ-ray singles of 2016Be02; 0.17 *5* in 1972Sh13.
709.5b& *3*	0.0048b *12*	1026.22	$(2,3)^-$	316.9282	3^-	E_γ: Others: 710.00 *8* in γ-ray singles of 2016Be02; 709.6 *10* in 1972Sh13. I_γ: Others: 0.141 *18* in γ-ray singles of 2016Be02; 0.17 *5* in 1972Sh13.
709.99b& *9*	0.119b *4*	1082.00	$(2,3)^-$	372.0724	3^-	E_γ: Others: 710.00 *8* in γ-ray singles of 2016Be02; 709.6 *10* in 1972Sh13. I_γ: Others: 0.141 *18* in γ-ray singles of 2016Be02; 0.17 *5* in 1972Sh13.
713.2 *3*	0.025 *16*	1039.04	$(3,4)^-$	325.8670	4^-	
714.51b& *16*	0.019b *6*	1086.54	$(4)^-$	372.0724	3^-	E_γ: Others: 714.84 *5* in γ-ray singles of 2016Be02; 714.78 *70* in 1972Sh13, but the line is complex. I_γ: Others: 0.237 *20* in γ-ray singles of 2016Be02; 0.35 *11* in 1972Sh13.
714.86b& *5*	0.138b *5*	945.78	$(2,3)^+$	230.9123	3^+	E_γ: Others: 714.84 *5* in γ-ray singles of 2016Be02; 714.78 *70* in 1972Sh13, but the line is complex. I_γ: Others: 0.237 *20* in γ-ray singles of 2016Be02; 0.35 *11* in 1972Sh13.
714.94b& *18*	0.055b *6*	884.52	$(3,4)^-$	169.4398	3^-	E_γ: Others: 714.84 *5* in γ-ray singles of 2016Be02; 714.78 *70* in 1972Sh13, but the line is complex. I_γ: Others: 0.237 *20* in γ-ray singles of 2016Be02; 0.35 *11* in 1972Sh13.
715.21b& *18*	0.103b *8*	871.445	$(2,3)^-$	156.0489	3^-	E_γ: Others: 714.84 *5* in γ-ray singles of 2016Be02; 714.8 *7* in 1972Sh13, but the line is complex. I_γ: Others: 0.237 *20* in γ-ray singles of 2016Be02; 0.35 *10* in 1972Sh13.

$^{188}_{75}Re_{113}$-33

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
716.6[b] 6	0.027[b] 6	899.341	(3,4)$^-$	182.7504	4$^-$	E_γ: Other: 716.71 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.073 *17* in γ-ray singles of 2016Be02.
718.0[b] 3	0.032[b] 5	1217.33	(1,2,3)$^+$	499.7354	3$^+$	E_γ: Other: 716.71 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.073 *17* in γ-ray singles of 2016Be02.
718.7[b] 3	0.0164[b] 23	1009.3	(1,2)$^-$	290.6611	1$^-$	E_γ: Other: 718.78 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.083 *25* in γ-ray singles of 2016Be02.
718.8[b] 3	0.047[b] 5	1035.37	(3,4)$^-$	316.9282	3$^-$	E_γ: Other: 718.78 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.083 *25* in γ-ray singles of 2016Be02.
721.2 4	0.016 15	1063.33	(3,4)$^+$	342.5857	4$^+$	
724.18[b&] 5	0.077[b] 5	1011.19	(2,3,4)$^-$	287.1240	4$^-$	E_γ: Others: 724.02 *10* in γ-ray singles of 2016Be02; 725.7 *11* in 1972Sh13, but the line is complex. I_γ: Others: 0.082 *16* in γ-ray singles of 2016Be02; 0.14 *4* in 1972Sh13.
726.12[b&] 21	0.042[b] 5	1088.546	(2,3,4)$^-$	362.721	2$^-$	E_γ: Others: 724.02 *10* in γ-ray singles of 2016Be02; 725.7 *11* in 1972Sh13, but the line is complex. I_γ: Others: 0.082 *16* in γ-ray singles of 2016Be02; 0.14 *4* in 1972Sh13.
726.88[b] 11	0.104[b] 18	983.48	(3,4)$^-$	256.9238	2$^-$	
726.88[b] 11	0.104[b] 18	1226.51	(1,2)$^+$	499.7354	3$^+$	
727.5 3	0.069 17	883.83	(2,3)$^-$	156.0489	3$^-$	
730.10 18	0.034 15	1433.56	(2,3)$^-$	704.04	2$^-$	
733.11 10	0.083 16	1075.60	(3,4)$^+$	342.5857	4$^+$	
738.86 24	0.035 14	1099.28	(3,4)$^+$	360.8869	5$^+$	
739.2 4	0.052 17	944.25	(1,2)$^-$	205.3451	2$^-$	
741.72[b] 16	0.0140[b] 12	1188.32	(4)$^-$	446.341	5$^-$	E_γ: Other: 741.56 *20* in γ-ray singles of 2016Be02. I_γ: Other: 0.032 *14* in γ-ray singles of 2016Be02.
742.0[b] 4	0.025[b] 4	925.19	(2,3,4)$^-$	182.7504	4$^-$	E_γ: Other: 741.56 *20* in γ-ray singles of 2016Be02. I_γ: Other: 0.032 *14* in γ-ray singles of 2016Be02.
744.02[b&] 10	0.058[b] 4	1000.37	(2,3)$^-$	256.9238	2$^-$	E_γ: Others: 744.29 *5* in γ-ray singles of 2016Be02; 744.2 *8* in 1972Sh13, but the line is complex. I_γ: Others: 0.191 *18* in γ-ray singles of 2016Be02; 0.27 *8* in 1972Sh13.
744.41[b&] 16	0.099[b] 11	914.23	(2,3)$^-$	169.4398	3$^-$	E_γ: Others: 744.29 *5* in γ-ray singles of 2016Be02; 744.2 *8* in 1972Sh13, but the line is complex. I_γ: Others: 0.191 *18* in γ-ray singles of 2016Be02; 0.27 *8* in 1972Sh13.
746.59[b] 5	0.061[b] 6	1086.54	(4)$^-$	339.947	5$^-$	E_γ: Other: 746.59 *18* in γ-ray singles of 2016Be02. I_γ: Other: 0.045 *14* in γ-ray singles of 2016Be02.
752.05[b] 11	0.022[b] 4	1039.04	(3,4)$^-$	287.1240	4$^-$	
752.1[b] 3	0.026[b] 8	1124.06	(2,3)$^-$	372.0724	3$^-$	
753.37[b] 19	0.034[b] 5	1247.10	(3,4)$^+$	493.707	4$^+$	E_γ: Other: 753.70 *14* from γ-ray singles in 2016Be02. I_γ: Other: 0.080 *19* from γ-ray singles in 2016Be02.
753.9[b] 4	0.014[b] 4	924.10	(2,3)$^-$	169.4398	3$^-$	E_γ: Other: 753.70 *14* from γ-ray singles in 2016Be02. I_γ: Other: 0.080 *19* from γ-ray singles in 2016Be02.

$^{188}_{75}Re_{113}$-34

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
754.4[b] *3*	0.0057[b] *22*	1117.10	(1,2)$^-$	362.721	2$^-$	E_γ: Other: 753.70 *14* from γ-ray singles in 2016Be02. I_γ: Other: 0.080 *19* from γ-ray singles in 2016Be02.
756.8[b] *3*	0.021[b] *5*	1099.28	(3,4)$^+$	342.5857	4$^+$	
758.69 *19*	0.057 *19*	822.803	(1,2)$^-$	63.5867	2$^-$	
763.01[b] *18*	0.034[b] *4*	932.69	(2,3)$^-$	169.4398	3$^-$	E_γ: Other: 762.73 *18* from γ-ray singles in 2016Be02. I_γ: Other: 0.066 *17* from γ-ray singles in 2016Be02.
763.10[b] *13*	0.037[b] *4*	1088.546	(2,3,4)$^-$	325.8670	4$^-$	E_γ: Other: 762.73 *18* from γ-ray singles in 2016Be02. I_γ: Other: 0.066 *17* from γ-ray singles in 2016Be02.
766.17 *9*	0.133 *22*	997.09	(3,4)$^+$	230.9123	3$^+$	
768.05[b] *21*	0.070[b] *5*	924.10	(2,3)$^-$	156.0489	3$^-$	E_γ: Other: 768.19 *20* in γ-ray singles of 2016Be02. I_γ: Other: 0.045 *16* in γ-ray singles of 2016Be02.
771.55[b] *19*	0.0117[b] *23*	1217.99	(3,4)$^-$	446.341	5$^-$	
772.75 *8*	0.190 *22*	955.69	(3,4)$^-$	182.7504	4$^-$	
779.5[b] *3*	0.012[b] *6*	1249.81	(2,3)$^-$	470.144	3$^-$	E_γ: Other: 780.3 *3* in γ-ray singles of 2016Be02. I_γ: Other: 0.020 *14* in γ-ray singles of 2016Be02.
780.43[b] *18*	0.015[b] *5*	1226.59	(3,4)$^-$	446.341	5$^-$	E_γ: Other: 780.3 *3* in γ-ray singles of 2016Be02. I_γ: Other: 0.020 *14* in γ-ray singles of 2016Be02.
784.8[b] *3*	0.037[b] *7*	1301.26	(3,4)$^-$	516.237	5$^-$	E_γ: Other: 784.23 *14* in γ-ray singles of 2016Be02. I_γ: Other: 0.050 *16* in γ-ray singles of 2016Be02.
784.9[b] *5*	0.027[b] *8*	1146.7	(2)$^-$	362.721	2$^-$	E_γ: Other: 784.23 *14* in γ-ray singles of 2016Be02. I_γ: Other: 0.050 *16* in γ-ray singles of 2016Be02.
[x]786.62 *20*	0.054 *15*					
788.39 *16*	0.052 *17*	944.25	(1,2)$^-$	156.0489	3$^-$	
792.49[b] *12*	0.0164[b] *23*	1146.01	(0,1)$^+$	353.5723	1$^+$	E_γ: Other: 792.39 *18* in γ-ray singles of 2016Be02. I_γ: Other: 0.042 *16* in γ-ray singles of 2016Be02.
792.8[b] *3*	0.020[b] *4*	1584.39	(2,3)$^-$	791.514	(2,3)$^-$	E_γ: Other: 792.39 *18* in γ-ray singles of 2016Be02. I_γ: Other: 0.042 *16* in γ-ray singles of 2016Be02.
794.93[b&] *3*	0.025[b] *4*	1157.796	(1,2)$^-$	362.721	2$^-$	E_γ: Others: 795.04 *5* in γ-ray singles of 2016Be02; 794.9 *8* in 1972Sh13, but the line is complex. I_γ: Others: 0.373 *25* in γ-ray singles of 2016Be02; 0.43 *13* in 1972Sh13.
795.12[b&] *3*	0.212[b] *11*	1025.994	(3,4)$^+$	230.9123	3$^+$	E_γ: Others: 795.04 *5* in γ-ray singles of 2016Be02; 794.9 *8* in 1972Sh13, but the line is complex. I_γ: Others: 0.373 *25* in γ-ray singles of 2016Be02; 0.43 *13* in 1972Sh13.
795.42[b&] *16*	0.057[b] *6*	1137.41	(3,4)$^+$	342.5857	4$^+$	E_γ: Others: 795.04 *5* in γ-ray singles of 2016Be02; 794.9 *8* in 1972Sh13, but the line is complex. I_γ: Others: 0.373 *25* in γ-ray singles of 2016Be02; 0.43 *13* in 1972Sh13.
795.50[b&] *12*	0.073[b] *4*	859.224	(2,3)$^-$	63.5867	2$^-$	E_γ: Others: 795.04 *5* in γ-ray singles of 2016Be02; 794.9 *8* in 1972Sh13, but the line is complex. I_γ: Others: 0.373 *25* in γ-ray singles of 2016Be02; 0.43 *13* in 1972Sh13.

$^{188}_{75}Re_{113}$-35

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
800.0[b] *3*	0.012[b] *4*	983.48	$(3,4)^-$	182.7504	4^-	E_γ: Other: 799.77 *14* in γ-ray singles of 2016Be02. I_γ: Other: 0.093 *17* in γ-ray singles of 2016Be02.
807.39 *11*	0.097 *21*	871.445	$(2,3)^-$	63.5867	2^-	
808.67 *14*	0.064 *21*	965.21	$(3,4)^-$	156.0489	3^-	
810.95 *14*	0.059 *19*	1183.04	$(3,4)^-$	372.0724	3^-	
812.98[b] *16*	0.032[b] *4*	1252.73	$(2,3,4)^+$	439.7533	3^+	E_γ: Other: 812.94 *20* in γ-ray singles of 2016Be02. I_γ: Other: 0.064 *16* in γ-ray singles of 2016Be02.
814.0[b] *5*	0.0164[b] *23*	983.48	$(3,4)^-$	169.4398	3^-	E_γ: Other: 812.94 *20* in γ-ray singles of 2016Be02. I_γ: Other: 0.064 *16* in γ-ray singles of 2016Be02.
819.66 *13*	0.064 *20*	883.83	$(2,3)^-$	63.5867	2^-	
821.7[b] *4*	0.033[b] *8*	1345.54	$(3,4)^-$	523.0435	4^-	E_γ: Other: 822.38 *7* in γ-ray singles of 2016Be02. I_γ: Other: 0.140 *22* in γ-ray singles of 2016Be02.
822.01[b] *19*	0.023[b] *5*	1108.62	$(3,4)^-$	287.1240	4^-	E_γ: Other: 822.38 *7* in γ-ray singles of 2016Be02. I_γ: Other: 0.140 *22* in γ-ray singles of 2016Be02.
822.2[b] *3*	0.082[b] *6*	978.22	$(2,3)^-$	156.0489	3^-	E_γ: Other: 822.38 *7* in γ-ray singles of 2016Be02. I_γ: Other: 0.140 *22* in γ-ray singles of 2016Be02.
822.32[b] *20*	0.0409[b] *23*	822.803	$(1,2)^-$	0.0	1^-	E_γ: Other: 822.38 *7* in γ-ray singles of 2016Be02. I_γ: Other: 0.140 *22* in γ-ray singles of 2016Be02.
825.06[b] *16*	0.063[b] *4*	1082.00	$(2,3)^-$	256.9238	2^-	
826.79[b] *23*	0.0199[b] *23*	1117.10	$(1,2)^-$	290.6611	1^-	E_γ: Other: 826.70 *12* in γ-ray singles of 2016Be02. I_γ: Other: 0.115 *18* in γ-ray singles of 2016Be02.
827.13[b] *20*	0.087[b] *5*	983.48	$(3,4)^-$	156.0489	3^-	E_γ: Other: 826.70 *12* in γ-ray singles of 2016Be02. I_γ: Other: 0.115 *18* in γ-ray singles of 2016Be02.
830.04[b&] *14*	0.040[b] *7*	1341.82	$(3,4)^+$	511.715	4^+	E_γ: Other: 829.2 *13* in 1972Sh13, but the line is complex. I_γ: Other: 0.52 *15* in 1972Sh13.
830.49[b&] *20*	0.060[b] *13*	1012.96	$(4)^-$	182.7504	4^-	E_γ: Other: 829.2 *13* in 1972Sh13. I_γ: Other: 0.52 *15* in 1972Sh13.
831.8[b] *8*	0.050[b] *13*	831.826	2^-	0.0	1^-	E_γ: Other: 832.47 *18* in γ-ray singles of 2016Be02. I_γ: Other: 0.052 *17* in γ-ray singles of 2016Be02.
835.2[b] *5*	0.025[b] *8*	1122.09	$(3,4)^-$	287.1240	4^-	E_γ: Other: 832.47 *18* in γ-ray singles of 2016Be02. I_γ: Other: 0.052 *17* in γ-ray singles of 2016Be02.
836.2[b] *3*	0.053[b] *6*	1207.95	$(2,3)^-$	372.0724	3^-	
837.1 *3*	0.040 *8*	1124.06	$(2,3)^-$	287.1240	4^-	E_γ: Other: 837.10 *25* in γ-ray singles of 2016Be02. I_γ: Other: 0.037 *17* in γ-ray singles of 2016Be02.
841.2[b] *5*	0.034[b] *5*	1011.19	$(2,3,4)^-$	169.4398	3^-	
842.14[b] *13*	0.081[b] *6*	1341.82	$(3,4)^+$	499.7354	3^+	E_γ: Other: 842.98 *15* in γ-ray singles of 2016Be02. I_γ: Other: 0.071 *19* in γ-ray singles of 2016Be02.
843.4[b] *4*	0.0210[b] *23*	1026.22	$(2,3)^-$	182.7504	4^-	E_γ: Other: 842.98 *15* in γ-ray singles of 2016Be02. I_γ: Other: 0.071 *19* in γ-ray singles of 2016Be02.

$^{188}_{75}Re_{113}$-36

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
843.9[b] *4*	0.021[b] *5*	1012.96	(4)$^-$	169.4398	3$^-$	E_γ: Other: 842.98 *15* in γ-ray singles of 2016Be02. I_γ: Other: 0.071 *19* in γ-ray singles of 2016Be02.
844.19[b] *20*	0.056[b] *7*	1075.60	(3,4)$^+$	230.9123	3$^+$	E_γ: Other: 845.02 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.085 *20* in γ-ray singles of 2016Be02.
845.5[b] *4*	0.036[b] *5*	1207.95	(2,3)$^-$	362.721	2$^-$	E_γ: Other: 845.02 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.085 *20* in γ-ray singles of 2016Be02.
852.84 *10*	0.140 *18*	1083.63	(3,4)$^+$	230.9123	3$^+$	
854.65[b] *16*	0.085[b] *9*	1011.19	(2,3,4)$^-$	156.0489	3$^-$	E_γ: Other: 854.93 *18* in γ-ray singles of 2016Be02. I_γ: Other: 0.063 *20* in γ-ray singles of 2016Be02.
855.09[b] *16*	0.0164[b] *12*	1301.26	(3,4)$^-$	446.341	5$^-$	E_γ: Other: 854.93 *18* in γ-ray singles of 2016Be02. I_γ: Other: 0.063 *20* in γ-ray singles of 2016Be02.
856.4[b] *7*	0.036[b] *7*	1039.04	(3,4)$^-$	182.7504	4$^-$	E_γ: Other: 856.18 *15* in γ-ray singles of 2016Be02. I_γ: Other: 0.082 *22* in γ-ray singles of 2016Be02.
856.6[b] *3*	0.035[b] *6*	1143.73	(3,4)$^-$	287.1240	4$^-$	E_γ: Other: 856.18 *15* in γ-ray singles of 2016Be02. I_γ: Other: 0.082 *22* in γ-ray singles of 2016Be02.
[x]857.57 *15*	0.081 *21*					
859.2 *3*	0.049 *19*	859.224	(2,3)$^-$	0.0	1$^-$	
859.8[b] *5*	0.028[b] *5*	924.10	(2,3)$^-$	63.5867	2$^-$	E_γ: Other: 860.38 *22* in γ-ray singles of 2016Be02. I_γ: Other: 0.049 *20* in γ-ray singles of 2016Be02.
860.1[b] *6*	0.0140[b] *23*	1117.10	(1,2)$^-$	256.9238	2$^-$	E_γ: Other: 860.38 *22* in γ-ray singles of 2016Be02. I_γ: Other: 0.049 *20* in γ-ray singles of 2016Be02.
862.72[b] *11*	0.050[b] *4*	1188.32	(4)$^-$	325.8670	4$^-$	E_γ: Other: 860.38 *22* in γ-ray singles of 2016Be02. I_γ: Other: 0.049 *20* in γ-ray singles of 2016Be02.
867.10[b] *10*	0.072[b] *4*	1124.06	(2,3)$^-$	256.9238	2$^-$	E_γ: Other: 867.10 *9* in γ-ray singles of 2016Be02. I_γ: Other: 0.140 *24* in γ-ray singles of 2016Be02.
867.21[b] *11*	0.0550[b] *23*	1157.796	(1,2)$^-$	290.6611	1$^-$	E_γ: Other: 867.10 *9* in γ-ray singles of 2016Be02. I_γ: Other: 0.140 *24* in γ-ray singles of 2016Be02.
868.00[b] *15*	0.055[b] *5*	1099.28	(3,4)$^+$	230.9123	3$^+$	E_γ: Other: 867.10 *9* in γ-ray singles of 2016Be02. I_γ: Other: 0.140 *24* in γ-ray singles of 2016Be02.
871.3[b] *4*	0.061[b] *7*	871.445	(2,3)$^-$	0.0	1$^-$	
874.6[b] *3*	0.0117[b] *23*	1165.62	(1,2)$^-$	290.6611	1$^-$	
878.74[b] *17*	0.081[b] *8*	1204.74	(3,4)$^-$	325.8670	4$^-$	
879.16[b] *16*	0.039[b] *12*	1061.90	(2,3)$^-$	182.7504	4$^-$	E_γ: Other: 879.73 *15* in γ-ray singles of 2016Be02. I_γ: Other: 0.091 *21* in γ-ray singles of 2016Be02.
879.74[b] *10*	0.053[b] *4*	1166.78	(2,3,4)$^-$	287.1240	4$^-$	E_γ: Other: 879.73 *15* in γ-ray singles of 2016Be02. I_γ: Other: 0.091 *21* in γ-ray singles of 2016Be02.
880.53[b] *23*	0.0187[b] *23*	1584.39	(2,3)$^-$	704.04	2$^-$	E_γ: Other: 879.73 *15* in γ-ray singles of 2016Be02. I_γ: Other: 0.091 *21* in γ-ray singles of 2016Be02.
881.0[b] *8*	0.048[b] *13*	944.25	(1,2)$^-$	63.5867	2$^-$	E_γ: Other: 879.73 *15* in γ-ray singles of 2016Be02. I_γ: Other: 0.091 *21* in γ-ray singles of 2016Be02.

$^{188}_{75}Re_{113}$-37

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
882.6[b] *13*	0.100[b] *22*	1039.04	(3,4)$^-$	156.0489	3$^-$	E_γ: Other: 883.08 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.100 *22* in γ-ray singles of 2016Be02.
883.6[b] *11*	0.013[b] *5*	883.83	(2,3)$^-$	0.0	1$^-$	E_γ: Other: 883.08 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.100 *22* in γ-ray singles of 2016Be02.
883.63[b] *15*	0.036[b] *4*	1345.54	(3,4)$^-$	462.0788	4$^-$	E_γ: Other: 883.08 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.100 *22* in γ-ray singles of 2016Be02.
883.73[b] *22*	0.012[b] *4*	1088.546	(2,3,4)$^-$	205.3451	2$^-$	E_γ: Other: 883.08 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.100 *22* in γ-ray singles of 2016Be02.
887.20[b] *25*	0.034[b] *6*	1249.81	(2,3)$^-$	362.721	2$^-$	
888.11 *22*	0.053 *19*	1448.17	(3,4)$^-$	558.231	4$^-$	
892.8 *3*	0.043 *13*	1049.15	(2,3)$^-$	156.0489	3$^-$	
898.58 *13*	0.122 *24*	1224.30	(3,4)$^-$	325.8670	4$^-$	
901.06 *13*	0.099 *23*	1188.32	(4)$^-$	287.1240	4$^-$	
903.9[b] *8*	0.019[b] *6*	1086.54	(4)$^-$	182.7504	4$^-$	
905.3[b] *8*	0.033[b] *9*	1061.90	(2,3)$^-$	156.0489	3$^-$	
907.1[b] *4*	0.021[b] *5*	1137.41	(3,4)$^+$	230.9123	3$^+$	
911.83 *23*	0.070 *20*	1082.00	(2,3)$^-$	169.4398	3$^-$	
914.63 *17*	0.076 *23*	978.22	(2,3)$^-$	63.5867	2$^-$	
916.52[b] *16*	0.038[b] *4*	1242.33	(3,4)$^-$	325.8670	4$^-$	
917.09[b] *9*	0.096[b] *5*	1217.33	(1,2,3)$^+$	300.2047	2$^+$	E_γ: Other: 917.04 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.109 *24* in γ-ray singles of 2016Be02.
917.4[b] *4*	0.035[b] *5*	1207.95	(2,3)$^-$	290.6611	1$^-$	E_γ: Other: 917.04 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.109 *24* in γ-ray singles of 2016Be02.
919.93 *17*	0.072 *22*	983.48	(3,4)$^-$	63.5867	2$^-$	
[x]922.20 *13*	0.113 *23*					
923.9[b] *5*	0.026[b] *4*	924.10	(2,3)$^-$	0.0	1$^-$	
925.8[b] *4*	0.0200[b] *23*	1082.00	(2,3)$^-$	156.0489	3$^-$	E_γ: Other: 926.07 *19* in γ-ray singles of 2016Be02. I_γ: Other: 0.075 *23* in γ-ray singles of 2016Be02.
926.26[b] *10*	0.092[b] *5*	1226.51	(1,2)$^+$	300.2047	2$^+$	E_γ: Other: 926.07 *19* in γ-ray singles of 2016Be02. I_γ: Other: 0.075 *23* in γ-ray singles of 2016Be02.
927.58[b] *17*	0.045[b] *5*	1097.22	(2,3,4)$^-$	169.4398	3$^-$	E_γ: Other: 927.69 *19* in γ-ray singles of 2016Be02. I_γ: Other: 0.08 *3* in γ-ray singles of 2016Be02.
931.4[b] *5*	0.0117[b] *23*	1217.99	(3,4)$^-$	287.1240	4$^-$	
932.9[b] *11*	0.016[b] *5*	1088.546	(2,3,4)$^-$	156.0489	3$^-$	
938.09[b] *13*	0.0258[b] *23*	1146.01	(0,1)$^+$	207.8480	0$^+$	E_γ: Other: 938.40 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.118 *24* in γ-ray singles of 2016Be02.
938.25[b] *22*	0.076[b] *5*	1108.62	(3,4)$^-$	169.4398	3$^-$	E_γ: Other: 938.40 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.118 *24* in γ-ray singles of 2016Be02.

$^{188}_{75}Re_{113}$-38

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
938.5[b] 4	<0.028[b]	1255.26	(2,3)$^-$	316.9282	3$^-$	E_γ: Other: 938.40 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.118 *24* in γ-ray singles of 2016Be02.
939.35[b] 14	0.039[b] 4	1226.59	(3,4)$^-$	287.1240	4$^-$	E_γ: Other: 938.40 *13* in γ-ray singles of 2016Be02. I_γ: Other: 0.118 *24* in γ-ray singles of 2016Be02.
941.42 19	0.074 23	1097.22	(2,3,4)$^-$	156.0489	3$^-$	
945.1[b] 8	0.052[b] 14	944.25	(1,2)$^-$	0.0	1$^-$	E_γ: Other: 945.38 *19* in γ-ray singles of 2016Be02. I_γ: Other: 0.078 *24* in γ-ray singles of 2016Be02.
945.6[b] 9	0.025[b] 6	1009.3	(1,2)$^-$	63.5867	2$^-$	E_γ: Other: 945.38 *19* in γ-ray singles of 2016Be02. I_γ: Other: 0.078 *24* in γ-ray singles of 2016Be02.
946.51 19	0.081 15	1011.19	(2,3,4)$^-$	63.5867	2$^-$	
951.1[b] 5	0.029[b] 5	1207.95	(2,3)$^-$	256.9238	2$^-$	E_γ: Other: 950.7 *3* in γ-ray singles of 2016Be02. I_γ: Other: 0.060 *22* in γ-ray singles of 2016Be02.
952.5[b] 5	0.0176[b] 23	1157.796	(1,2)$^-$	205.3451	2$^-$	E_γ: Other: 950.7 *3* in γ-ray singles of 2016Be02. I_γ: Other: 0.060 *22* in γ-ray singles of 2016Be02.
952.7[b] 3	0.015[b] 8	1122.09	(3,4)$^-$	169.4398	3$^-$	E_γ: Other: 950.7 *3* in γ-ray singles of 2016Be02. I_γ: Other: 0.060 *22* in γ-ray singles of 2016Be02.
955.8[b] 3	0.0129[b] 23	1584.39	(2,3)$^-$	628.849	2$^-$	E_γ: Other: 956.84 *21* in γ-ray singles of 2016Be02. I_γ: Other: 0.079 *23* in γ-ray singles of 2016Be02.
958.20[b] 12	0.074[b] 5	1258.11	(1)$^+$	300.2047	2$^+$	E_γ: Other: 956.84 *21* in γ-ray singles of 2016Be02. I_γ: Other: 0.079 *23* in γ-ray singles of 2016Be02.
[x]959.03 17	0.101 25					
962.5[b] 3	0.039[b] 7	1433.56	(2,3)$^-$	470.144	3$^-$	
966.1[b] 4	0.019[b] 5	1122.09	(3,4)$^-$	156.0489	3$^-$	
971.04 23	0.071 24	1034.51	(1,2)$^-$	63.5867	2$^-$	
[x]981.35 23	0.063 14					
985.9 3	0.046 13	1049.15	(2,3)$^-$	63.5867	2$^-$	
988.0[b] 6	0.0117[b] 23	1157.796	(1,2)$^-$	169.4398	3$^-$	E_γ: Other: 990.3 *7* in γ-ray singles of 2016Be02. I_γ: Other: 0.017 *11* in γ-ray singles of 2016Be02.
1000.6[b] 3	0.024[b] 4	1326.22	(3,4)$^-$	325.8670	4$^-$	
1010.5 4	0.034 13	1166.78	(2,3,4)$^-$	156.0489	3$^-$	
1013.99[b] 24	0.058[b] 7	1513.73	(2,3)$^+$	499.7354	3$^+$	E_γ: Other: 1013.67 *21* in γ-ray singles of 2016Be02. I_γ: Other: 0.070 *15* in γ-ray singles of 2016Be02.
1014.07[b] 12	0.0446[b] 23	1301.26	(3,4)$^-$	287.1240	4$^-$	E_γ: Other: 1013.67 *21* in γ-ray singles of 2016Be02. I_γ: Other: 0.070 *15* in γ-ray singles of 2016Be02.
1016.3[b] 3	0.033[b] 5	1247.10	(3,4)$^+$	230.9123	3$^+$	
1018.47[b] 23	0.0164[b] 23	1226.51	(1,2)$^+$	207.8480	0$^+$	E_γ: Other: 1019.8 *3* in γ-ray singles of 2016Be02. I_γ: Other: 0.057 *13* in γ-ray singles of 2016Be02.
1018.5[b] 3	0.069[b] 7	1082.00	(2,3)$^-$	63.5867	2$^-$	E_γ: Other: 1019.8 *3* in γ-ray singles of 2016Be02. I_γ: Other: 0.057 *13* in γ-ray singles of 2016Be02.

$^{188}_{75}Re_{113}$-39

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

γ(^{188}Re) (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
1021.8[b] 3	0.026[b] 5	1252.73	(2,3,4)$^+$	230.9123	3$^+$	
[x]1040.74 22	0.066 13					
1041.5[b] 4	0.021[b] 4	1224.30	(3,4)$^-$	182.7504	4$^-$	E_γ: Other: 1042.2 4 in γ-ray singles of 2016Be02. I_γ: Other: 0.07 3 in γ-ray singles of 2016Be02.
1041.7[b] 5	0.025[b] 6	1341.82	(3,4)$^+$	300.2047	2$^+$	E_γ: Other: 1042.2 4 in γ-ray singles of 2016Be02. I_γ: Other: 0.07 3 in γ-ray singles of 2016Be02.
1048.8[b] 10	0.023[b] 7	1049.15	(2,3)$^-$	0.0	1$^-$	E_γ: Other: 1049.8 4 in γ-ray singles of 2016Be02. I_γ: Other: 0.061 18 in γ-ray singles of 2016Be02.
1049.89[b] 16	0.056[b] 5	1255.26	(2,3)$^-$	205.3451	2$^-$	E_γ: Other: 1049.8 4 in γ-ray singles of 2016Be02. I_γ: Other: 0.061 18 in γ-ray singles of 2016Be02.
1050.19[b] 6	0.0575[b] 23	1258.11	(1)$^+$	207.8480	0$^+$	E_γ: Other: 1049.8 4 in γ-ray singles of 2016Be02. I_γ: Other: 0.061 18 in γ-ray singles of 2016Be02.
1052.0[b] 6	0.028[b] 6	1207.95	(2,3)$^-$	156.0489	3$^-$	
1054.71[b] 16	0.094[b] 5	1224.30	(3,4)$^-$	169.4398	3$^-$	
1055.87[b] 18	0.048[b] 5	1261.52	(2,3)$^-$	205.3451	2$^-$	E_γ: Other: 1055.60 17 in γ-ray singles of 2016Be02. I_γ: Other: 0.14 3 in γ-ray singles of 2016Be02.
1057.4[b] 3	0.034[b] 6	1557.45	(2,3)$^+$	499.7354	3$^+$	
1058.2[b] 3	0.019[b] 4	1345.54	(3,4)$^-$	287.1240	4$^-$	E_γ: Other: 1059.9 4 in γ-ray singles of 2016Be02. I_γ: Other: 0.050 14 in γ-ray singles of 2016Be02.
1058.8[b] 4	0.021[b] 5	1122.09	(3,4)$^-$	63.5867	2$^-$	E_γ: Other: 1059.9 4 in γ-ray singles of 2016Be02. I_γ: Other: 0.050 14 in γ-ray singles of 2016Be02.
1062.0[b] 3	0.039[b] 11	1217.99	(3,4)$^-$	156.0489	3$^-$	E_γ: Other: 1062.19 22 in γ-ray singles of 2016Be02. I_γ: Other: 0.11 3 in γ-ray singles of 2016Be02.
1062.3[b] 9	0.40[b] 12	1061.90	(2,3)$^-$	0.0	1$^-$	E_γ: Other: 1062.19 22 in γ-ray singles of 2016Be02. I_γ: Other: 0.11 3 in γ-ray singles of 2016Be02.
1063.0[b] 3	0.024[b] 5	1232.28	(2,3)$^-$	169.4398	3$^-$	E_γ: Other: 1062.19 22 in γ-ray singles of 2016Be02. I_γ: Other: 0.11 3 in γ-ray singles of 2016Be02.
1070.9[b] 11	0.012[b] 4	1226.59	(3,4)$^-$	156.0489	3$^-$	
1076.0[b] 3	0.09[b] 3	1557.45	(2,3)$^+$	482.1384	2$^+$	
1081.8 7	0.022 12	1082.00	(2,3)$^-$	0.0	1$^-$	
1101.4[b] 5	0.052[b] 7	1166.78	(2,3,4)$^-$	63.5867	2$^-$	E_γ: Other: 1100.9 4 in γ-ray singles of 2016Be02. I_γ: Other: 0.045 13 in γ-ray singles of 2016Be02.
1101.9[b] 4	0.014[b] 4	1464.4	(2,3)$^-$	362.721	2$^-$	E_γ: Other: 1100.9 4 in γ-ray singles of 2016Be02. I_γ: Other: 0.045 13 in γ-ray singles of 2016Be02.
1108.7 6	0.032 13	1448.17	(3,4)$^-$	339.947	5$^-$	
1117.5[b] 6	0.0153[b] 23	1117.10	(1,2)$^-$	0.0	1$^-$	E_γ: Other: 1119.2 8 in γ-ray singles of 2016Be02. I_γ: Other: 0.025 12 in γ-ray singles of 2016Be02.
1122.1[b] 5	0.014[b] 4	1448.17	(3,4)$^-$	325.8670	4$^-$	

$^{188}_{75}Re_{113}$-40

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
1143.2[b] *3*	0.065[b] *13*	1326.22	(3,4)$^-$	182.7504	4$^-$	E_γ: Other: 1143.1 *3* in γ-ray singles of 2016Be02. I_γ: Other: 0.059 *13* in γ-ray singles of 2016Be02.
1144.69[b] *25*	0.090[b] *7*	1207.95	(2,3)$^-$	63.5867	2$^-$	E_γ: Other: 1143.1 *3* in γ-ray singles of 2016Be02. I_γ: Other: 0.059 *13* in γ-ray singles of 2016Be02.
1156.8[b] *6*	0.015[b] *5*	1326.22	(3,4)$^-$	169.4398	3$^-$	
1157.7[b] *4*	0.0294[b] *23*	1157.796	(1,2)$^-$	0.0	1$^-$	
[x]1197.4 *5*	0.043 *12*					
1203.8[b] *4*	0.0117[b] *23*	1557.45	(2,3)$^+$	353.5723	1$^+$	
1208.0[b] *4*	0.038[b] *5*	1207.95	(2,3)$^-$	0.0	1$^-$	
1213.6 *9*	0.022 *13*	1513.73	(2,3)$^+$	300.2047	2$^+$	
1218.9 *7*	0.028 *12*	1584.39	(2,3)$^-$	362.721	2$^-$	
[x]1246.6 *5*	0.041 *13*					
1256.3 *5*	0.044 *12*	1557.45	(2,3)$^+$	300.2047	2$^+$	
1294.0 *8*	0.029 *11*	1464.4	(2,3)$^-$	169.4398	3$^-$	
[x]1306.7 *4*	0.057 *12*					
[x]1366.3 *7*	0.040 *12*					
[x]1401.2 *6*	0.041 *12*					
4888.6[a] *4*	0.21[a] *4*	(5871.65)	2$^+$,3$^+$	983.48	(3,4)$^-$	
4893.4[a] *4*	0.107[a] *22*	(5871.65)	2$^+$,3$^+$	978.22	(2,3)$^-$	
4916.3[a] *4*	0.103[a] *22*	(5871.65)	2$^+$,3$^+$	955.69	(3,4)$^-$	
4927.2[a] *6*	0.051[a] *11*	(5871.65)	2$^+$,3$^+$	944.25	(1,2)$^-$	
4958.7[a] *7*	0.18[a] *4*	(5871.65)	2$^+$,3$^+$	913.816	(2,3)$^+$	
4973.1[a] *7*	0.20[a] *4*	(5871.65)	2$^+$,3$^+$	897.26	(2,3)$^-$	
4987.9[a] *5*	0.22[a] *5*	(5871.65)	2$^+$,3$^+$	883.83	(2,3)$^-$	
5000.8[a] *5*	0.23[a] *5*	(5871.65)	2$^+$,3$^+$	871.445	(2,3)$^-$	
5012.7[a] *4*	0.45[a] *9*	(5871.65)	2$^+$,3$^+$	859.224	(2,3)$^-$	
5020.6[a] *5*	0.13[a] *3*	(5871.65)	2$^+$,3$^+$	851.87	(3,4)$^-$	
5040.1[a] *5*	0.063[a] *13*	(5871.65)	2$^+$,3$^+$	831.826	2$^-$	
5049.3[a] *4*	0.210[a] *43*	(5871.65)	2$^+$,3$^+$	822.803	(1,2)$^-$	
5062.8[a] *7*	0.047[a] *11*	(5871.65)	2$^+$,3$^+$	807.628	(1,2)$^+$	
5073.2[a] *4*	0.80[a] *16*	(5871.65)	2$^+$,3$^+$	798.25	3$^-$	
5080.3[a] *5*	0.13[a] *3*	(5871.65)	2$^+$,3$^+$	791.514	(2,3)$^-$	
5088.6[a] *10*	0.030[a] *9*	(5871.65)	2$^+$,3$^+$	782.794	3$^-$	
5117.1[a] *4*	0.101[a] *21*	(5871.65)	2$^+$,3$^+$	754.585	(3,4)$^-$	
5126.3[a] *8*	0.033[a] *7*	(5871.65)	2$^+$,3$^+$	745.21	(3,4)$^-$	
5134.8[a] *4*	0.33[a] *7*	(5871.65)	2$^+$,3$^+$	737.021	3$^-$	
5148.9[a] *5*	0.037[a] *9*	(5871.65)	2$^+$,3$^+$	723.177	2$^-$	
5167.6[a] *4*	0.18[a] *4*	(5871.65)	2$^+$,3$^+$	704.04	2$^-$	
5191.8[a] *6*	0.061[a] *13*	(5871.65)	2$^+$,3$^+$	680.113	2$^-$	
5224.5[a] *4*	0.16[a] *3*	(5871.65)	2$^+$,3$^+$	647.296	2$^-$	

$^{188}_{75}Re_{113}$-41

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)

$\gamma(^{188}Re)$ (continued)

E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	E_γ ‡	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π
5242.8[a] 4	0.084[a] 20	(5871.65)	2$^+$,3$^+$	628.849	2$^-$	5518.1[a] 10	0.018[a] 5	(5871.65)	2$^+$,3$^+$	353.5723	1$^+$
5263.2[a] 10	0.013[a] 4	(5871.65)	2$^+$,3$^+$	608.881	4$^-$	5528.4[ae] 9	0.010[a] 10	(5871.65)	2$^+$,3$^+$	342.5857	4$^+$
5289.8[a] 8	0.015[a] 4	(5871.65)	2$^+$,3$^+$	582.149	1$^-$	5545.9[a] 4	0.18[a] 4	(5871.65)	2$^+$,3$^+$	325.8670	4$^-$
5296.5[a] 5	0.019[a] 5	(5871.65)	2$^+$,3$^+$	575.719	3$^+$	5554.8[a] 4	0.20[a] 4	(5871.65)	2$^+$,3$^+$	316.9282	3$^-$
5313.3[a] 10	0.09[a] 4	(5871.65)	2$^+$,3$^+$	558.231	4$^-$	5571.5[a] 4	0.062[a] 13	(5871.65)	2$^+$,3$^+$	300.2047	2$^+$
5314.8[a] 10	0.029[a] 18	(5871.65)	2$^+$,3$^+$	554.322	4$^+$	5580.9[a] 4	0.063[a] 15	(5871.65)	2$^+$,3$^+$	290.6611	1$^-$
5348.7[a] 3	0.39[a] 8	(5871.65)	2$^+$,3$^+$	523.0435	4$^-$	5584.2[a] 8	0.011[a] 4	(5871.65)	2$^+$,3$^+$	287.1240	4$^-$
5359.7[a] 5	0.034[a] 7	(5871.65)	2$^+$,3$^+$	511.715	4$^+$	5614.7[a] 3	0.20[a] 4	(5871.65)	2$^+$,3$^+$	256.9238	2$^-$
5371.9[a] 3	0.120[a] 24	(5871.65)	2$^+$,3$^+$	499.7354	3$^+$	5640.7[a] 4	0.041[a] 10	(5871.65)	2$^+$,3$^+$	230.9123	3$^+$
5389.5[a] 5	0.015[a] 4	(5871.65)	2$^+$,3$^+$	482.1384	2$^+$	5666.3[a] 4	0.047[a] 10	(5871.65)	2$^+$,3$^+$	205.3451	2$^-$
5401.2[a] 10	0.007[a] 3	(5871.65)	2$^+$,3$^+$	470.144	3$^-$	5688.8[a] 3	0.23[a] 5	(5871.65)	2$^+$,3$^+$	182.7504	4$^-$
5409.5[a] 5	0.017[a] 5	(5871.65)	2$^+$,3$^+$	462.0788	4$^-$	5702.1[a] 3	0.26[a] 5	(5871.65)	2$^+$,3$^+$	169.4398	3$^-$
5432.2[a] 6	0.014[a] 5	(5871.65)	2$^+$,3$^+$	439.7533	3$^+$	5715.5[a] 3	0.114[a] 20	(5871.65)	2$^+$,3$^+$	156.0489	3$^-$
5499.6[a] 3	0.100[a] 20	(5871.65)	2$^+$,3$^+$	372.0724	3$^-$	5807.8[a] 4	0.040[a] 8	(5871.65)	2$^+$,3$^+$	63.5867	2$^-$
5509.0[a] 4	0.041[a] 10	(5871.65)	2$^+$,3$^+$	362.721	2$^-$	5871.6[a] 3	0.73[a] 15	(5871.65)	2$^+$,3$^+$	0.0	1$^-$

† Additional information 2.
‡ From γ-ray singles data in 2016Be02, unless otherwise stated.
# From 1972Sh13. The Iγ values were normalized using Iγ(227.07γ) from 2016Be02 as Iγ(2016Be02)=2.42/Iγ(1972Sh13)=3.0.
@ Complex line with contributions from ^{186}Re subtracted.
& Placed in the level scheme by 2010Ba48 and 2016Be02.
[a] Primary γ-ray transitions from 1972Sh13. Iγ is the γ-ray intensity per 100 neutrons capture, based on σ_c=73 *b*.
[b] From $\gamma\gamma$ coin data in 2016Be02. The Iγ values were normalized using Iγ(227.07γ) from 2016Be02 as Iγ(singles)=2.42/Iγ(coin)=2.07.
[c] From ce data in 1968Su01, unless otherwise stated.
[d] Determined from a least-square fit to experimental data using the BrIccMixing code. The uncertainties in Ice values are given in 1968Su01.
[e] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

$^{188}_{75}Re_{113}$-42

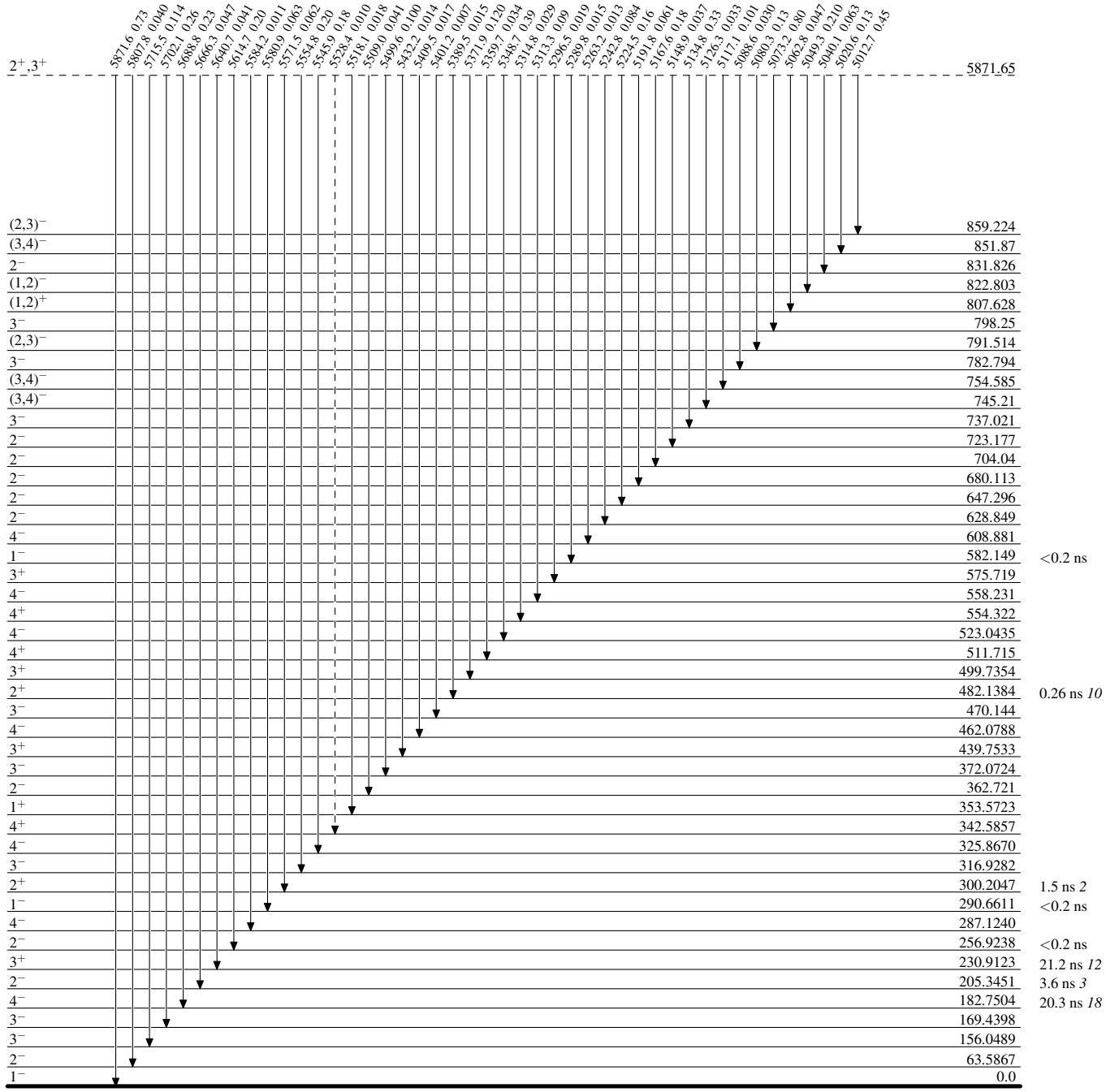
^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

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)

Level Scheme

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary



$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Legend

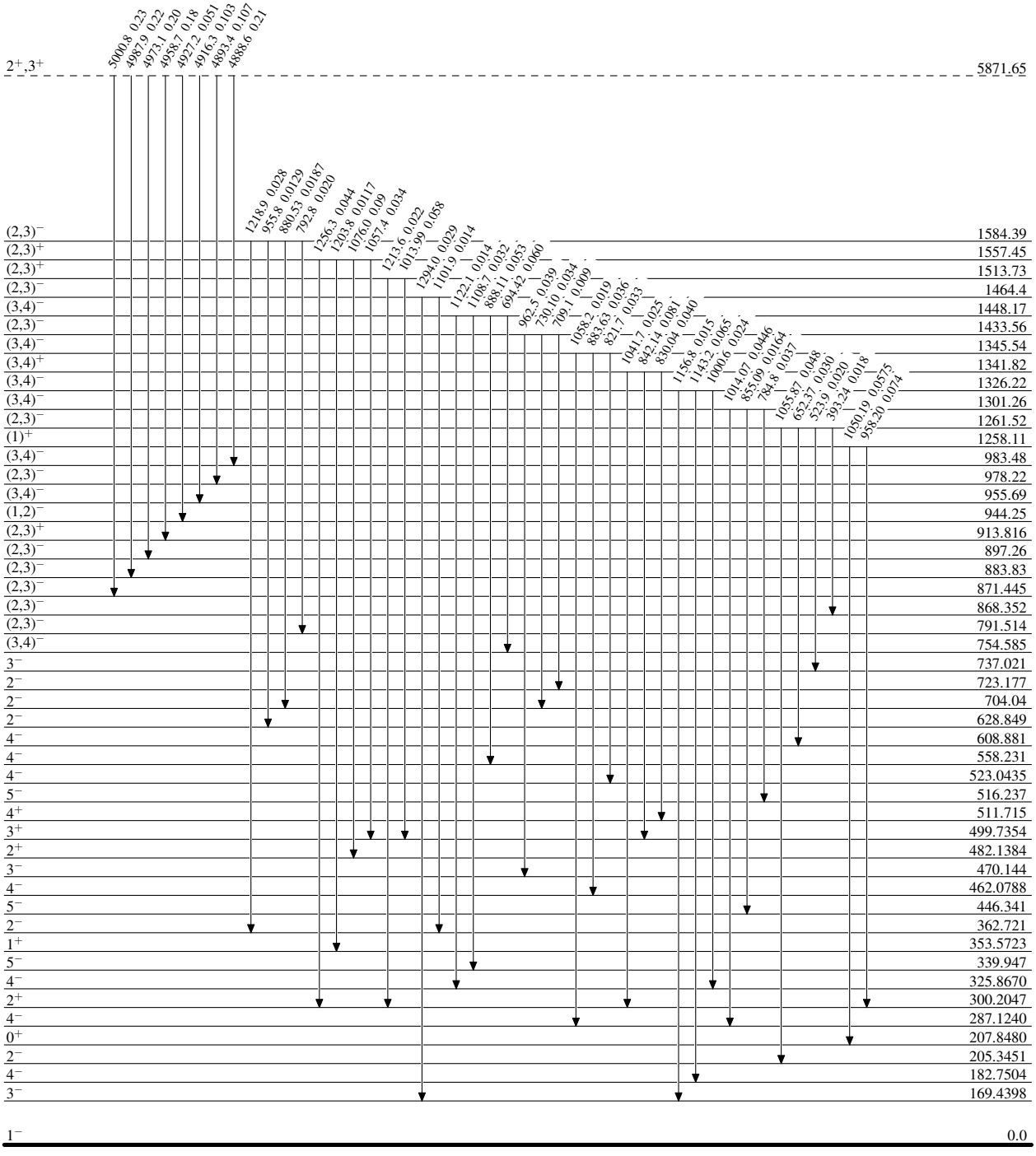
$I_\gamma < 2\% \times I_\gamma^{max}$

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

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

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary



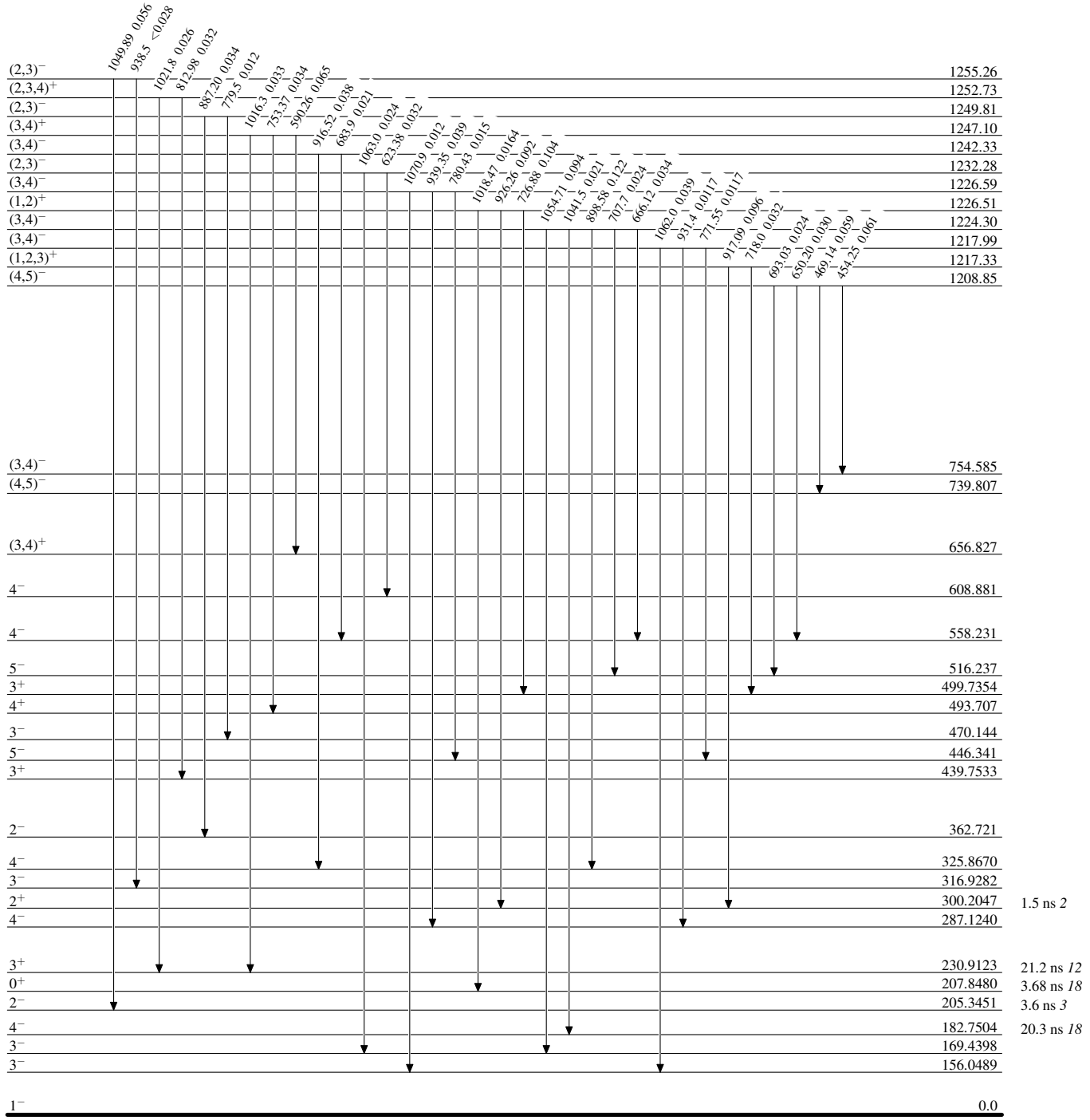
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



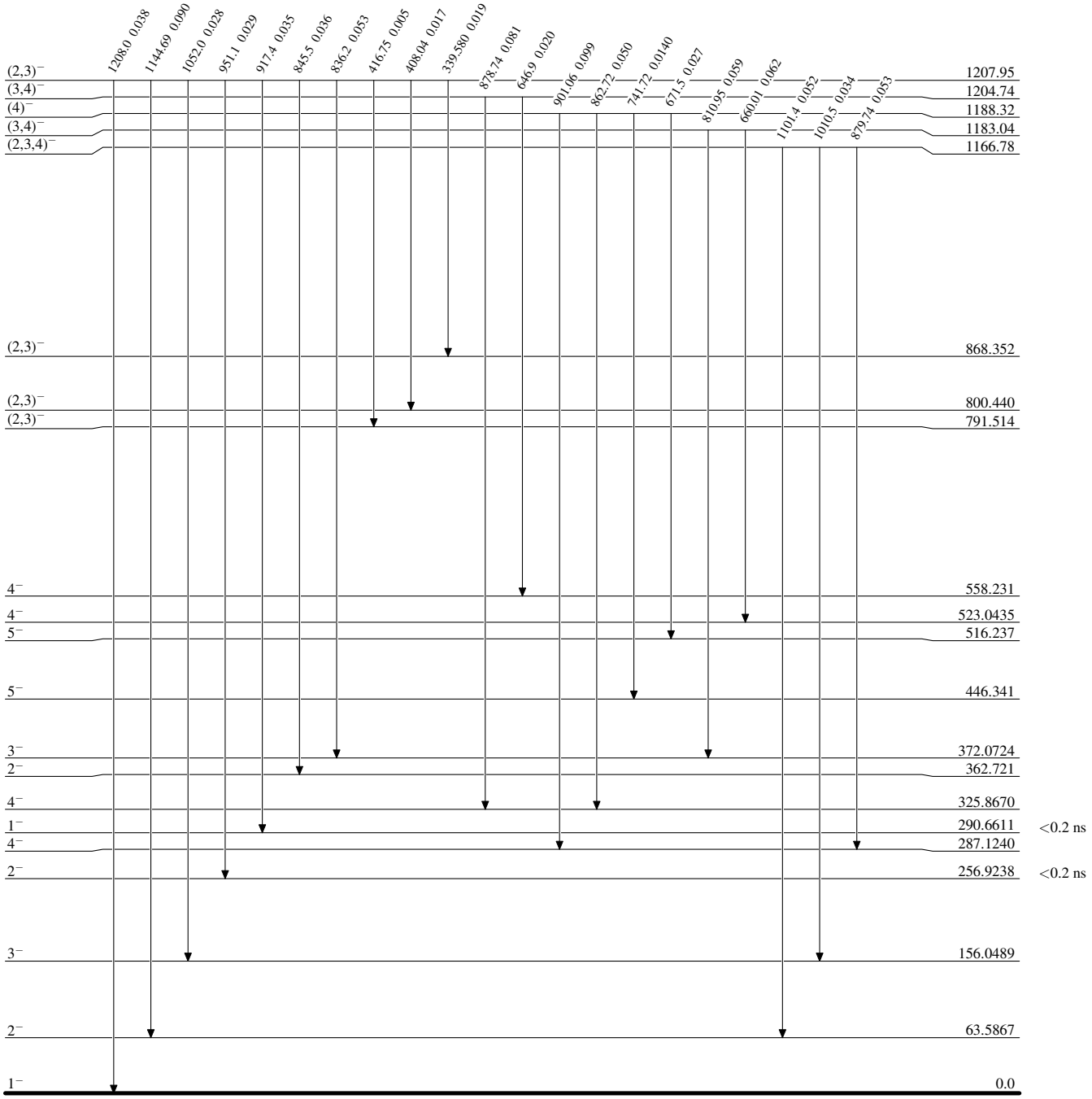
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



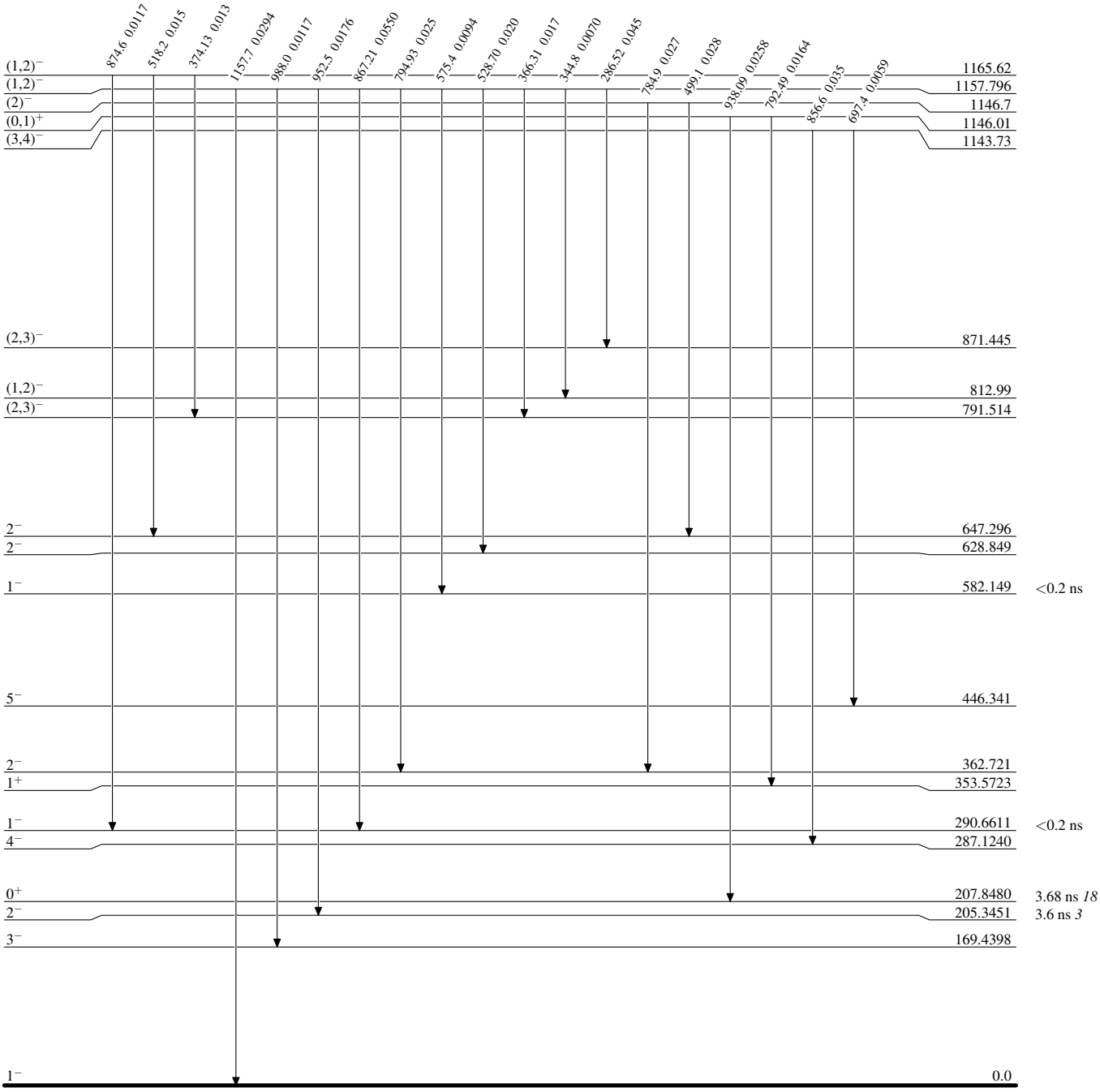
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

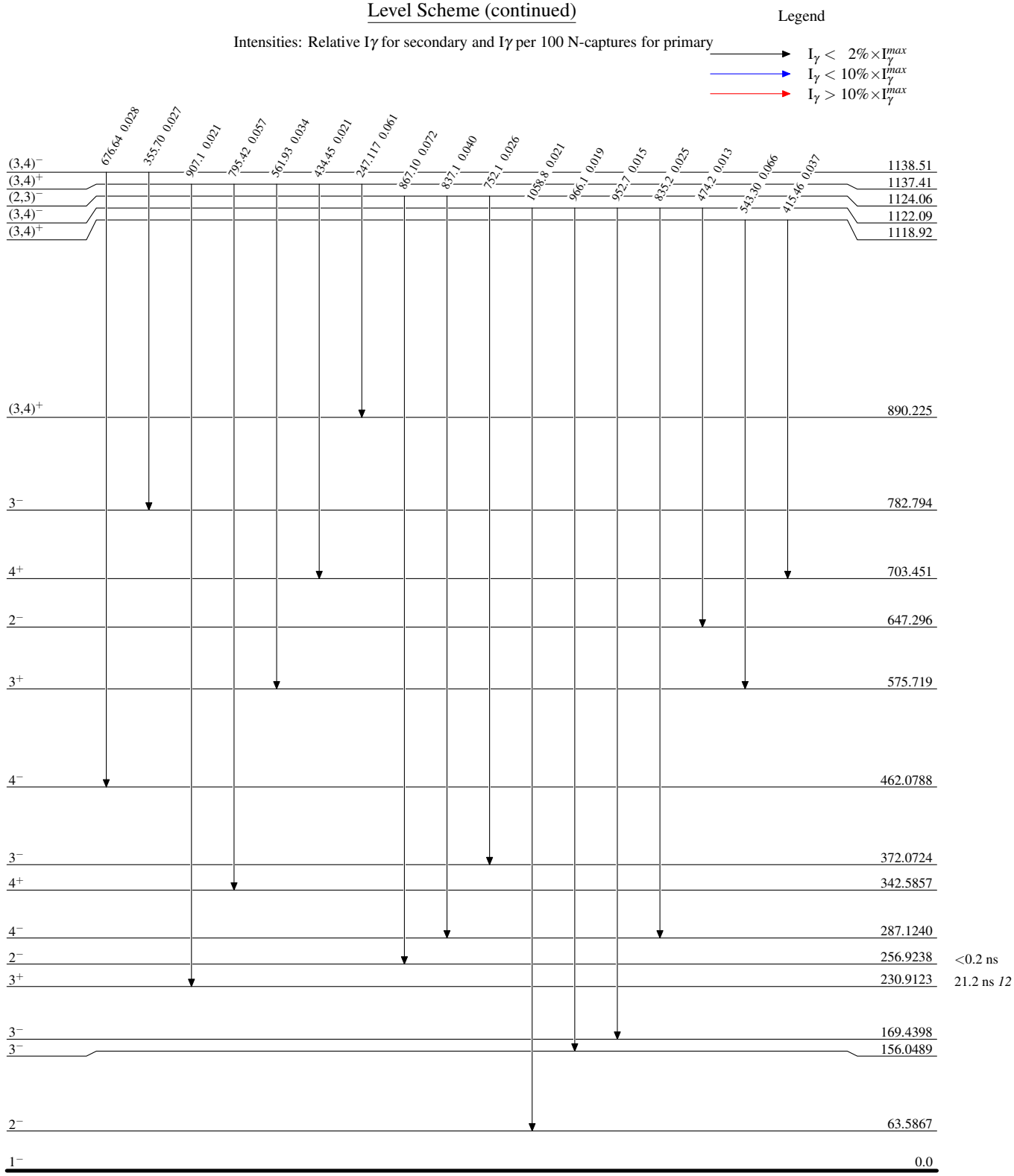


$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary



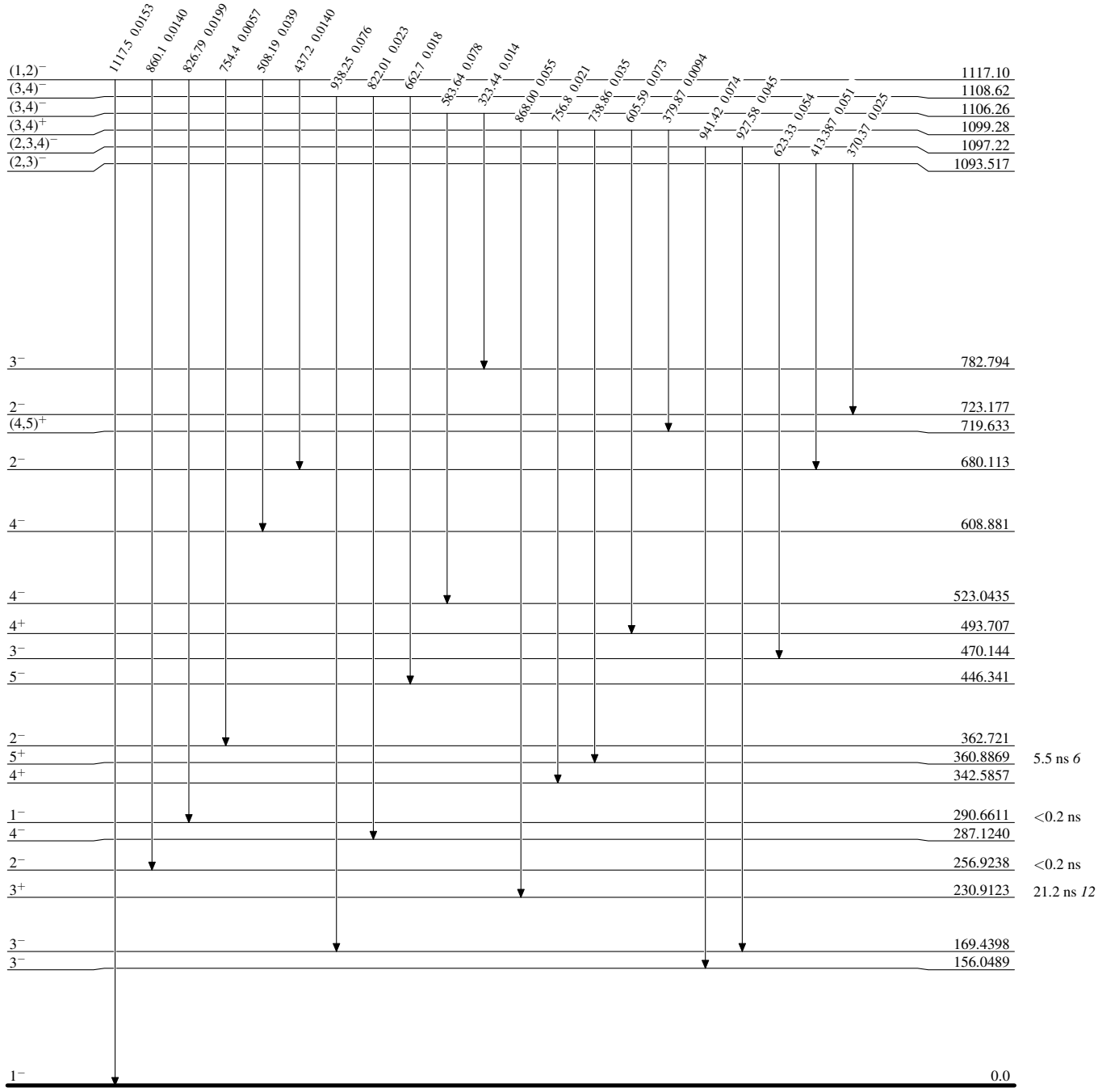
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



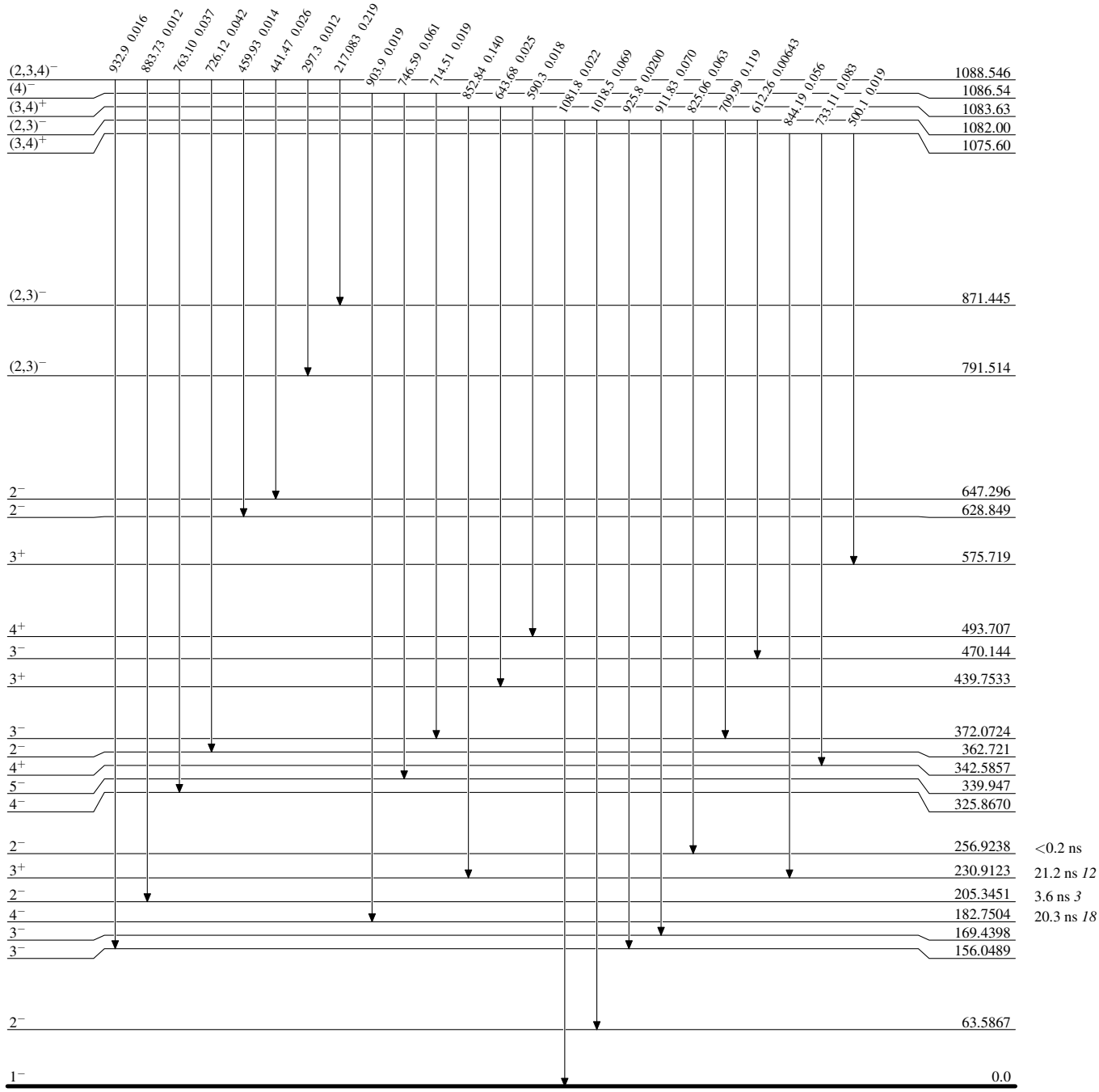
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
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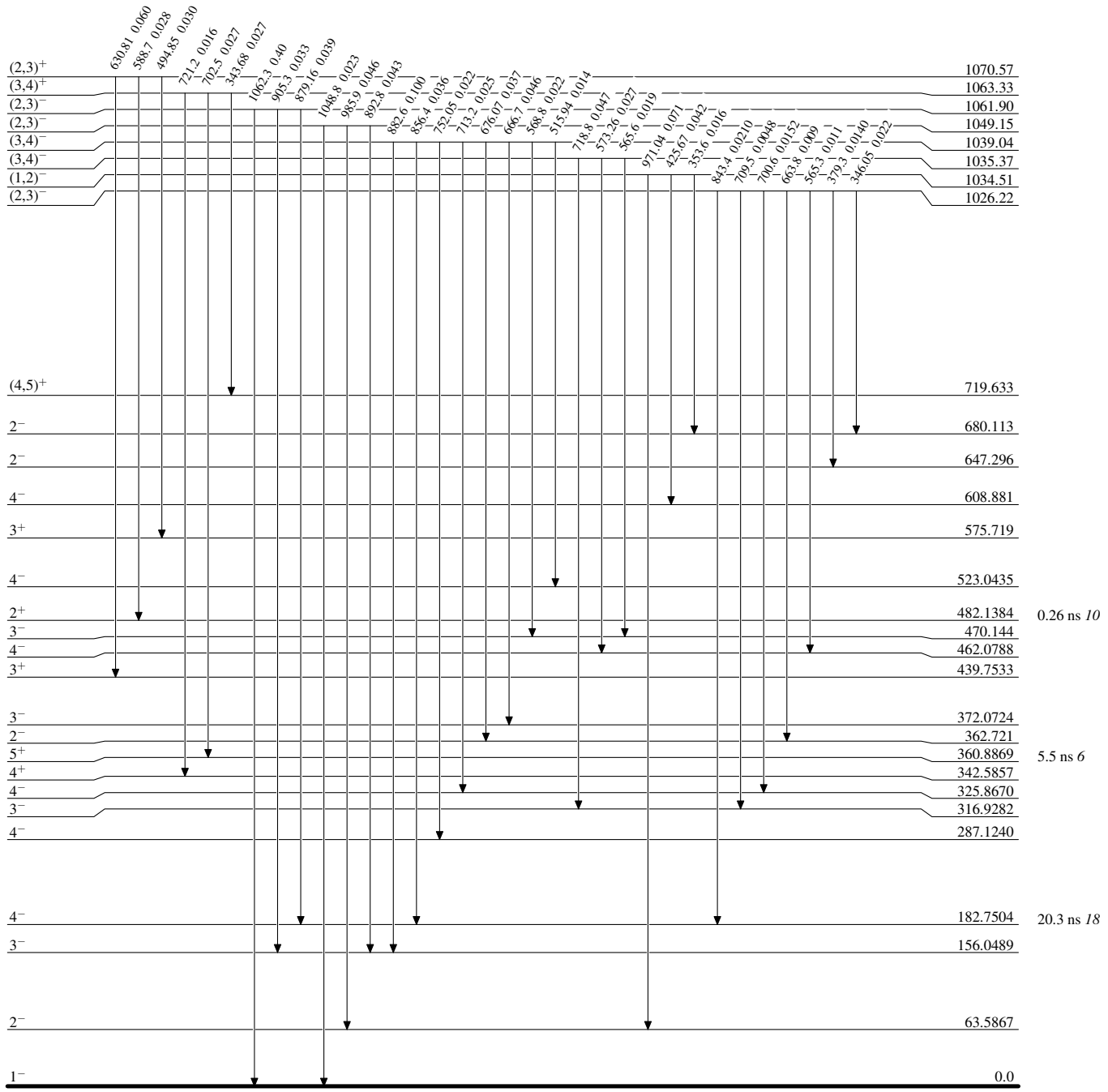

$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
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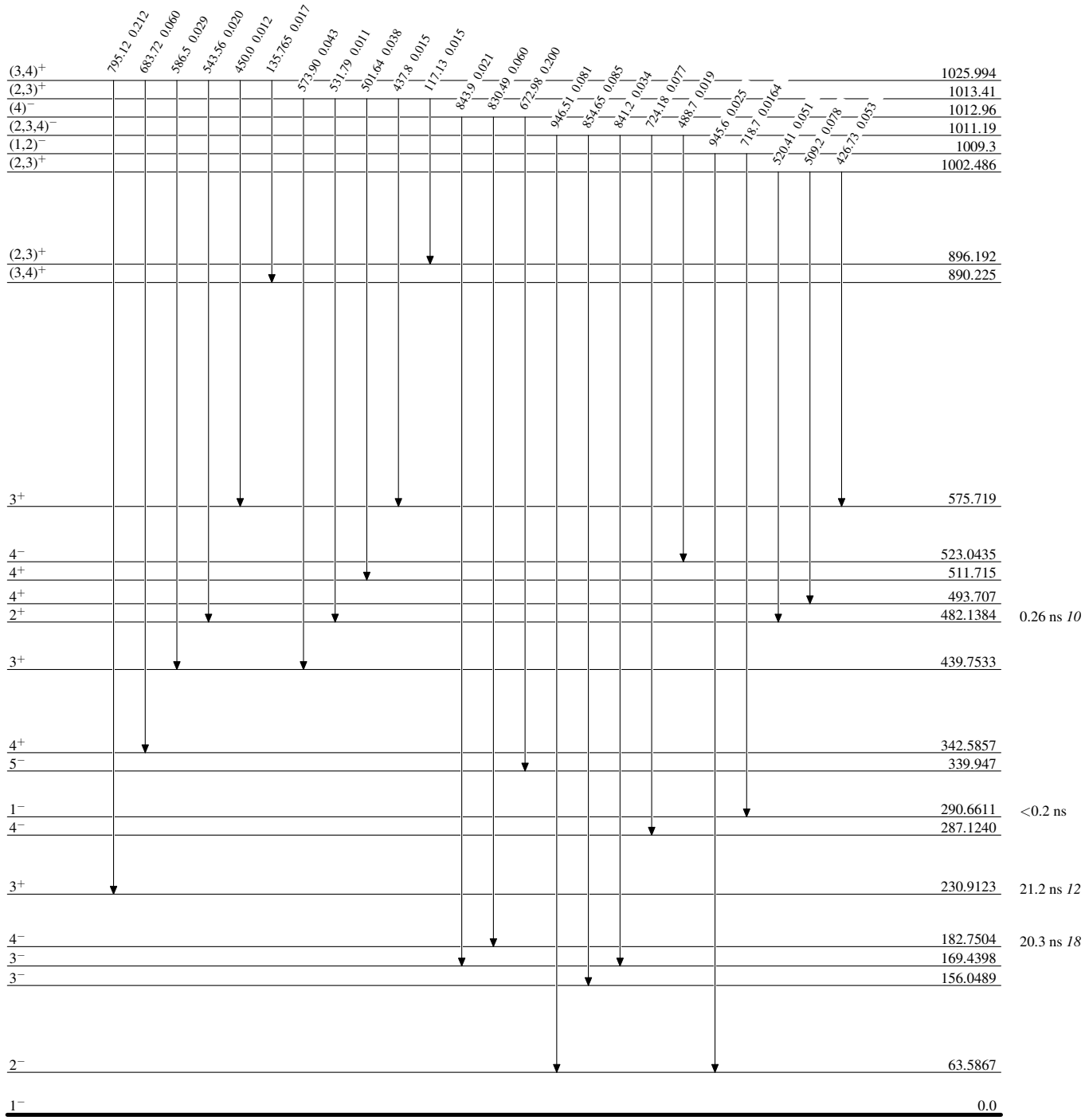

$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

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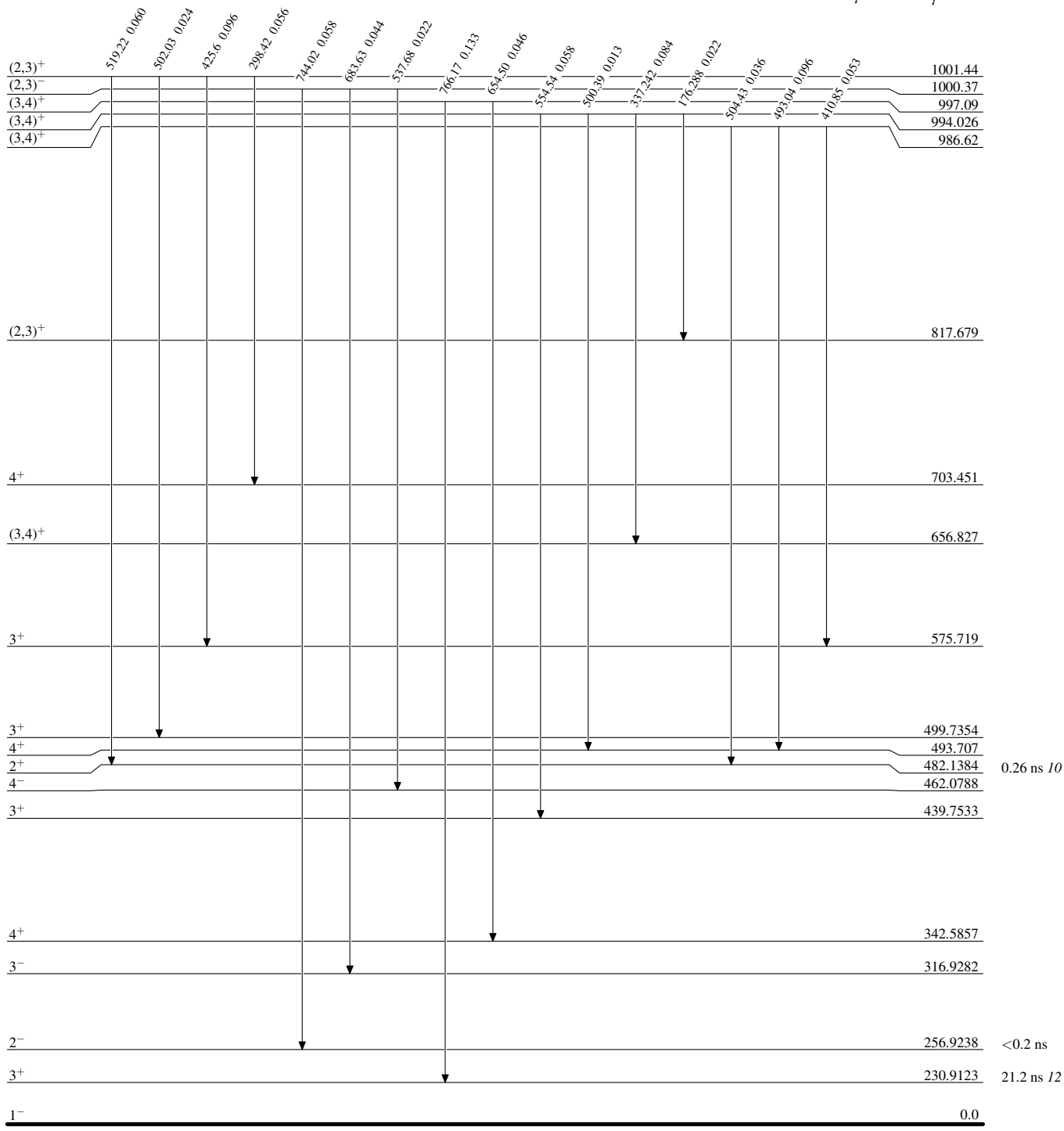

$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

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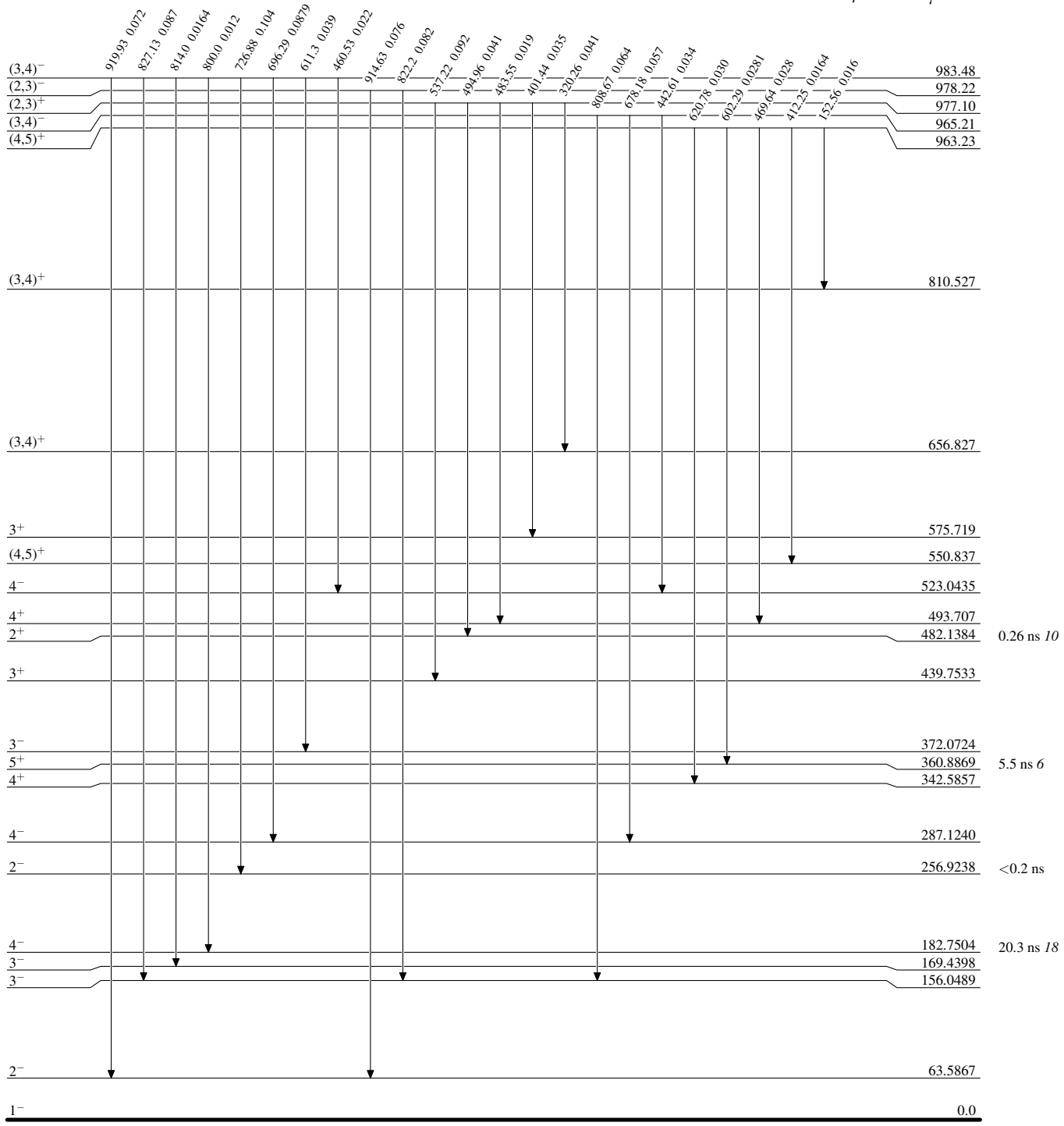

$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
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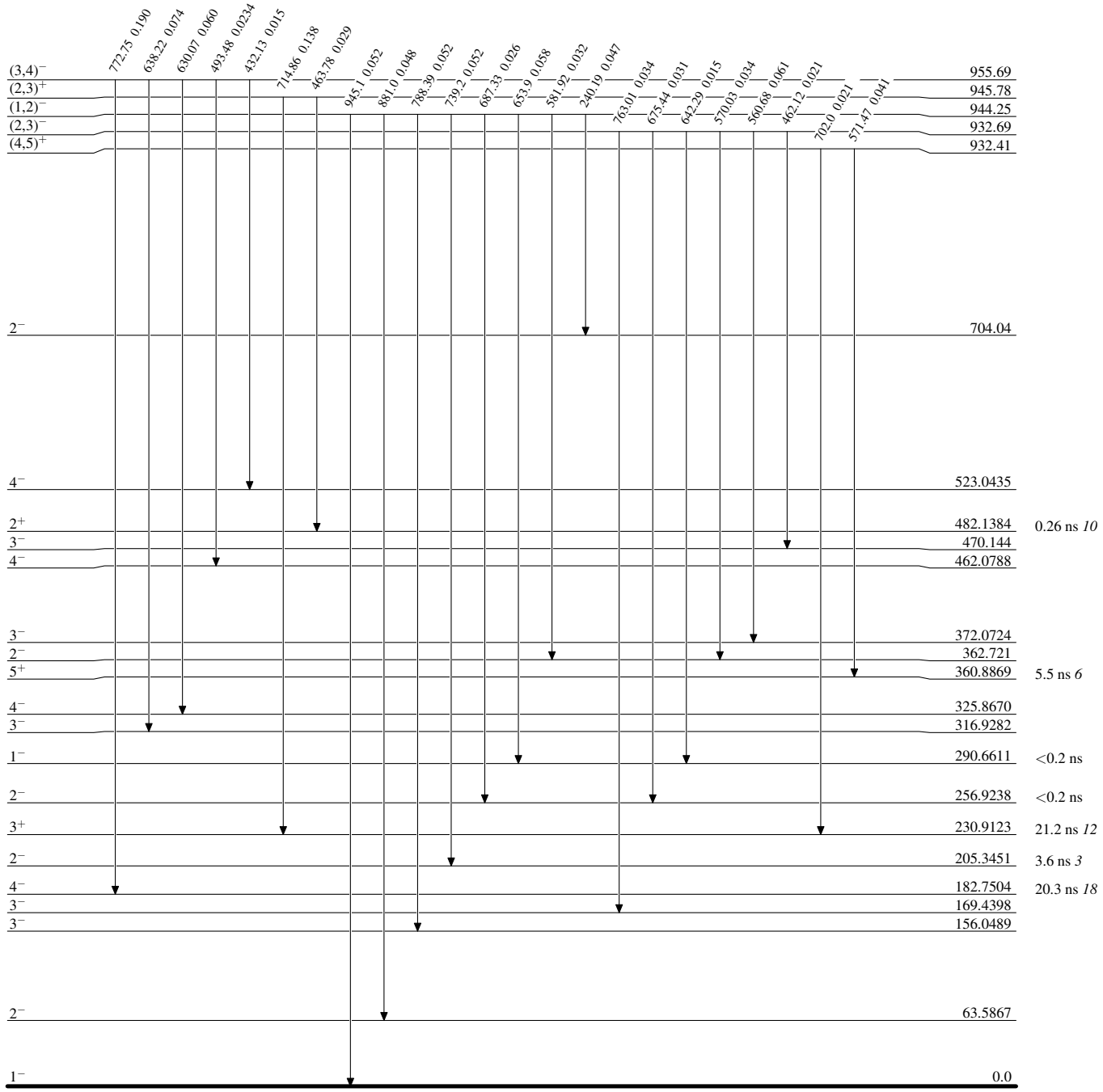
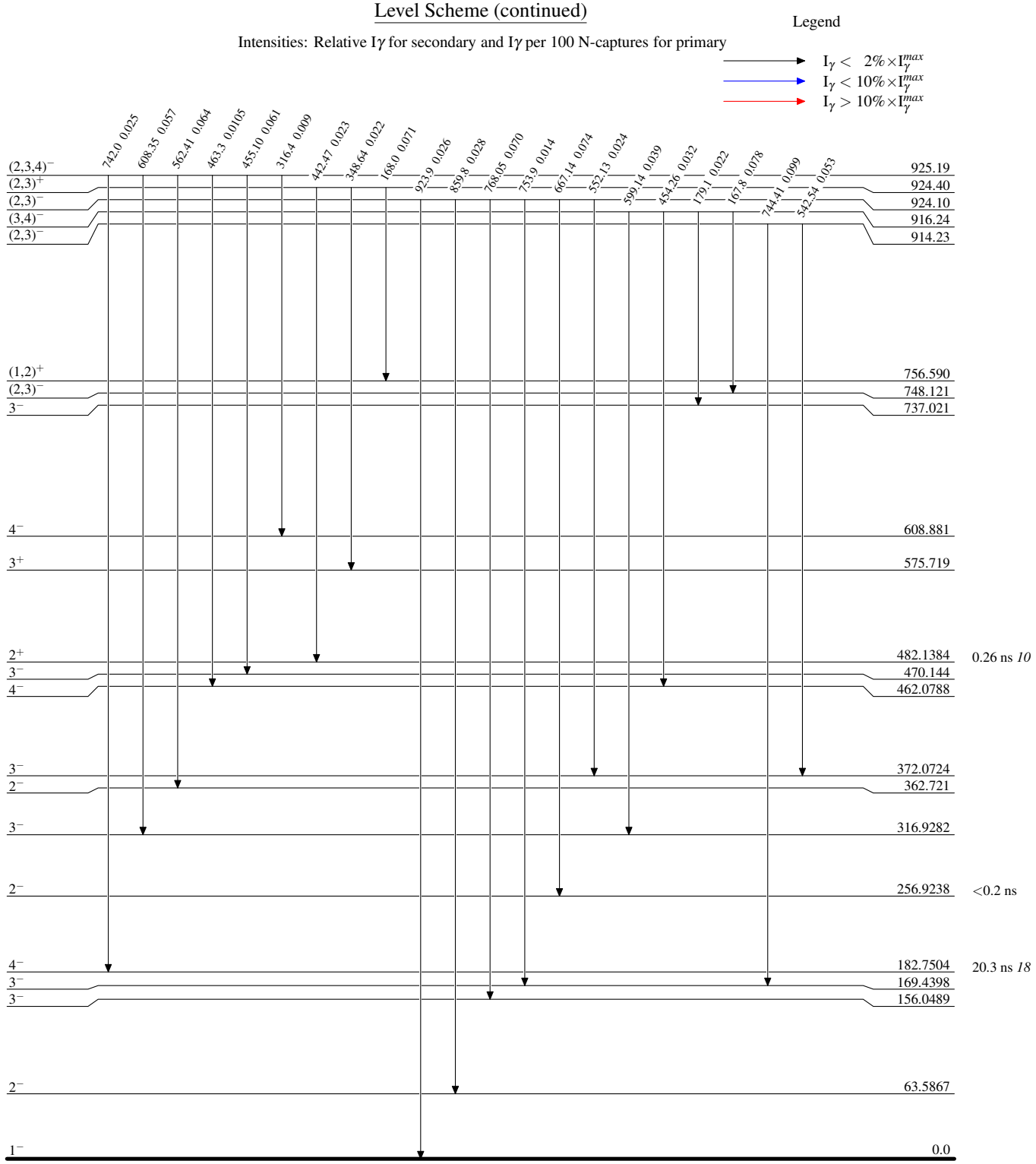


$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary



$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

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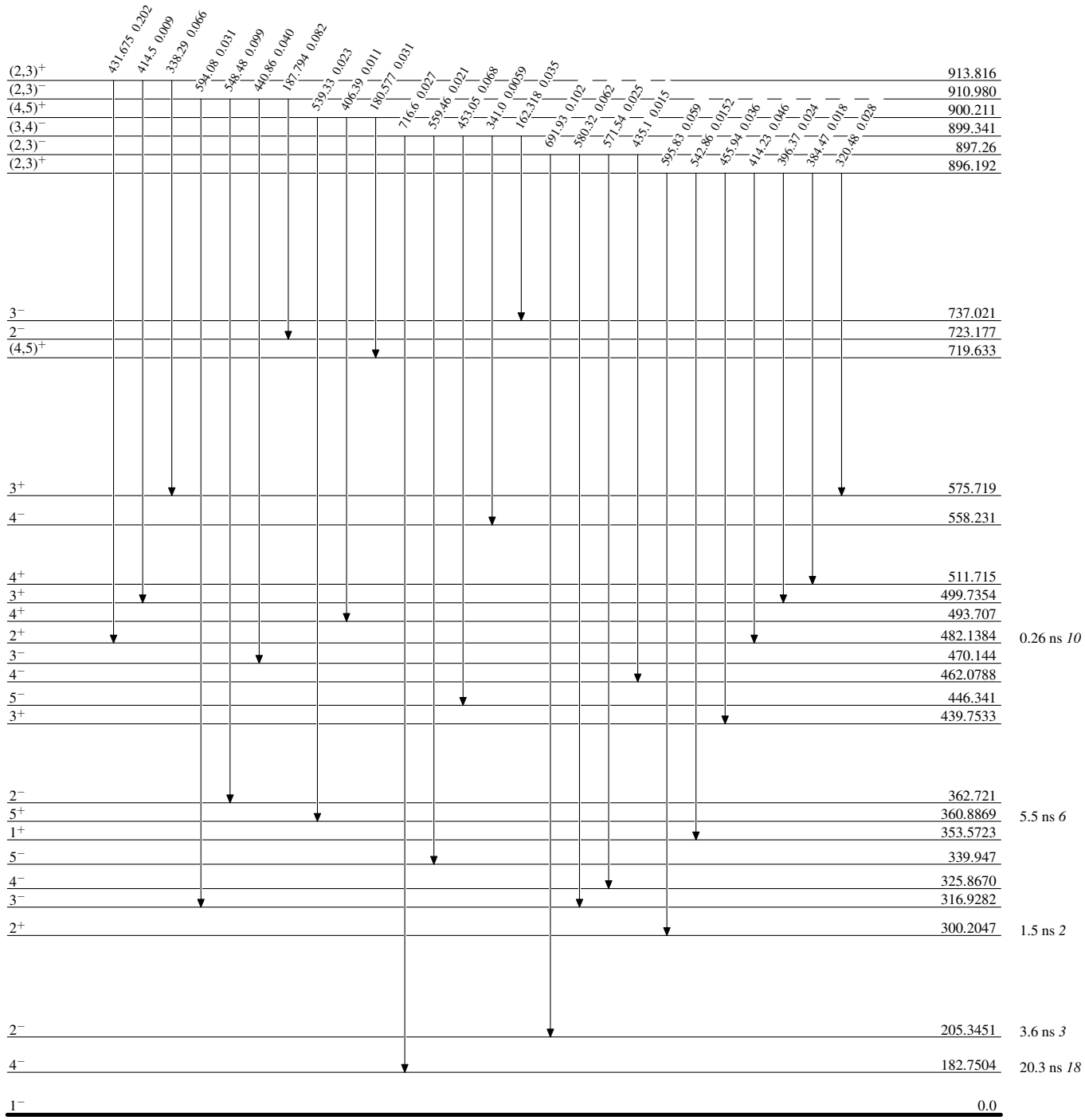

$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

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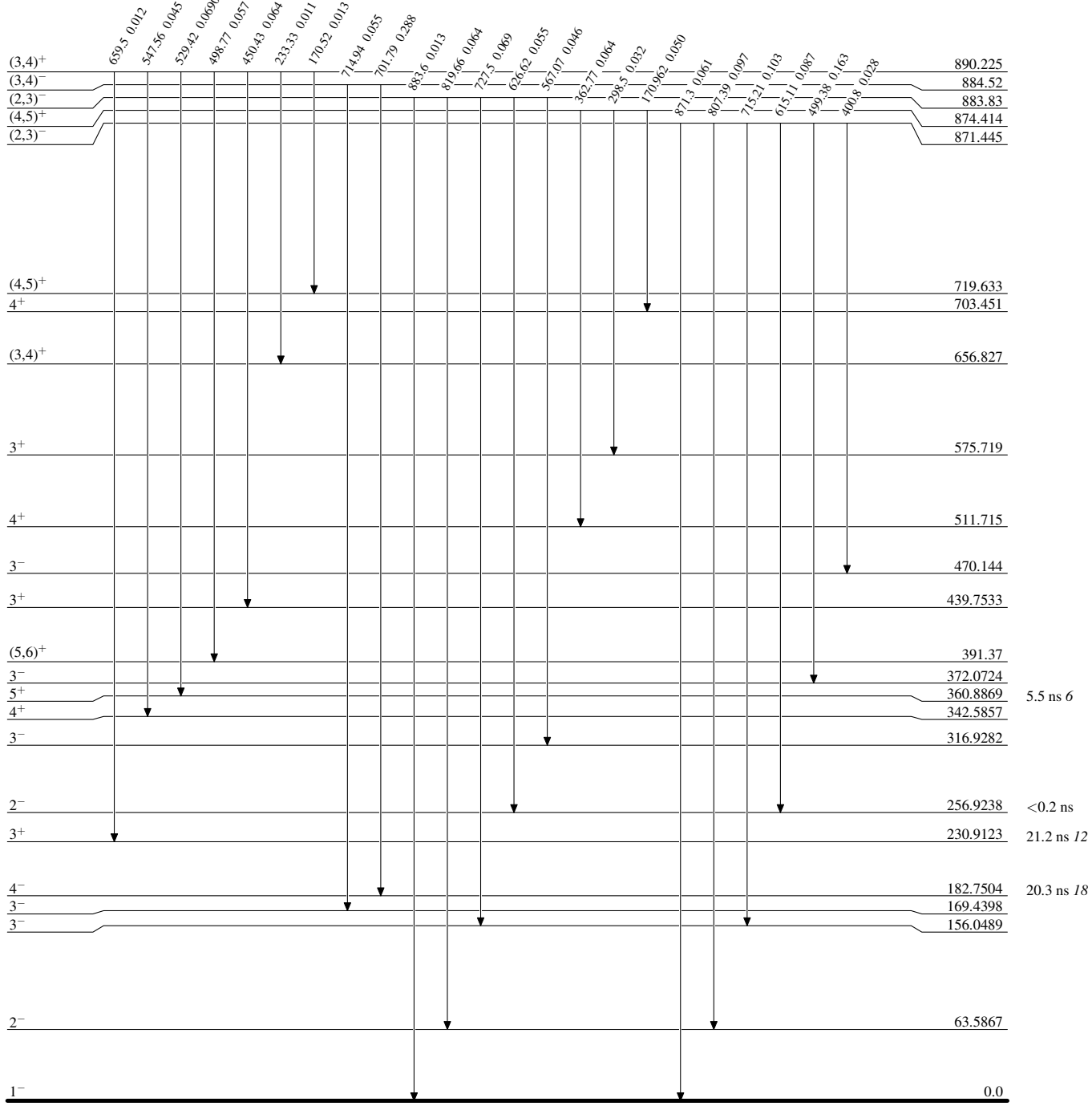
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



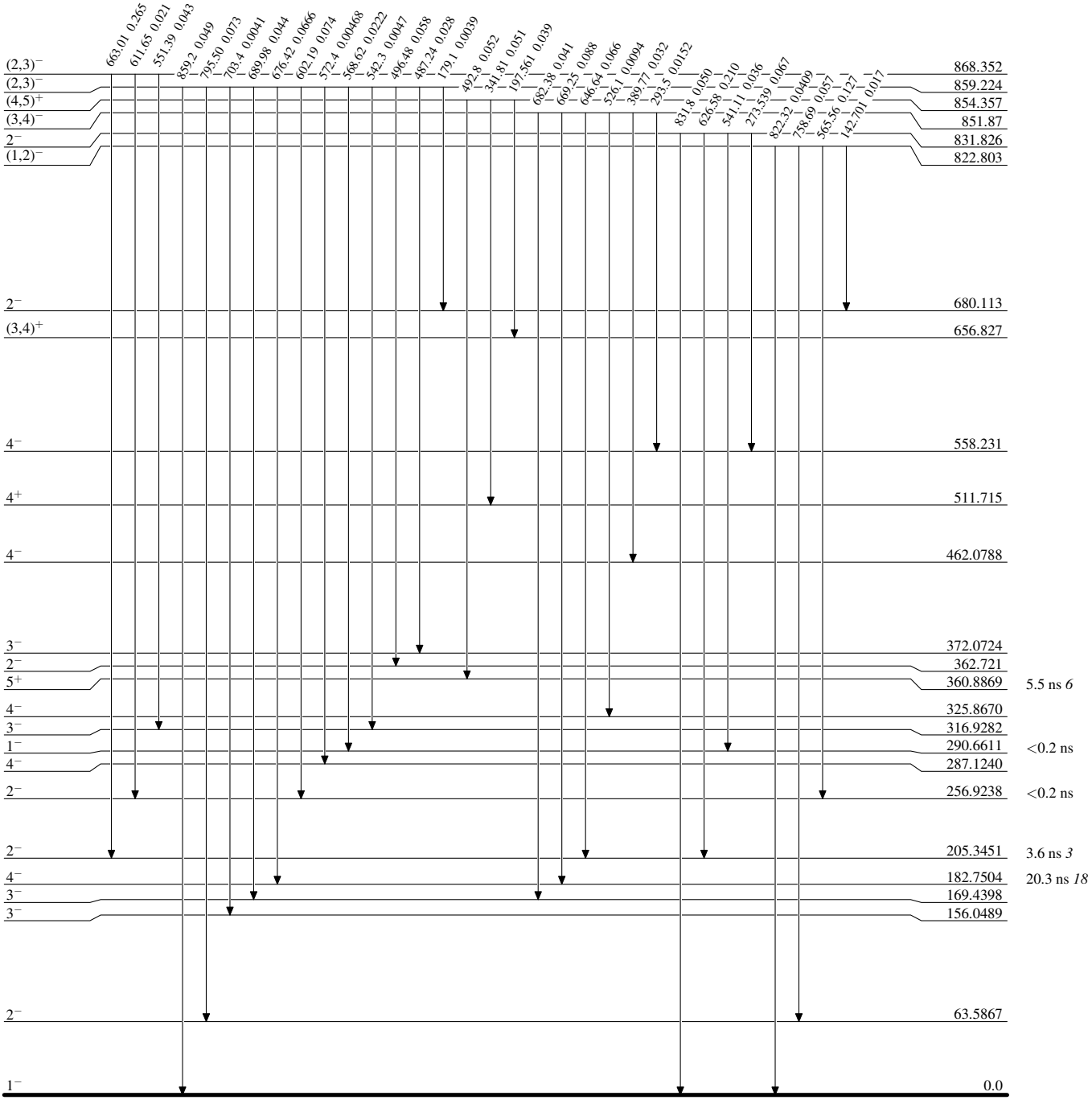
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



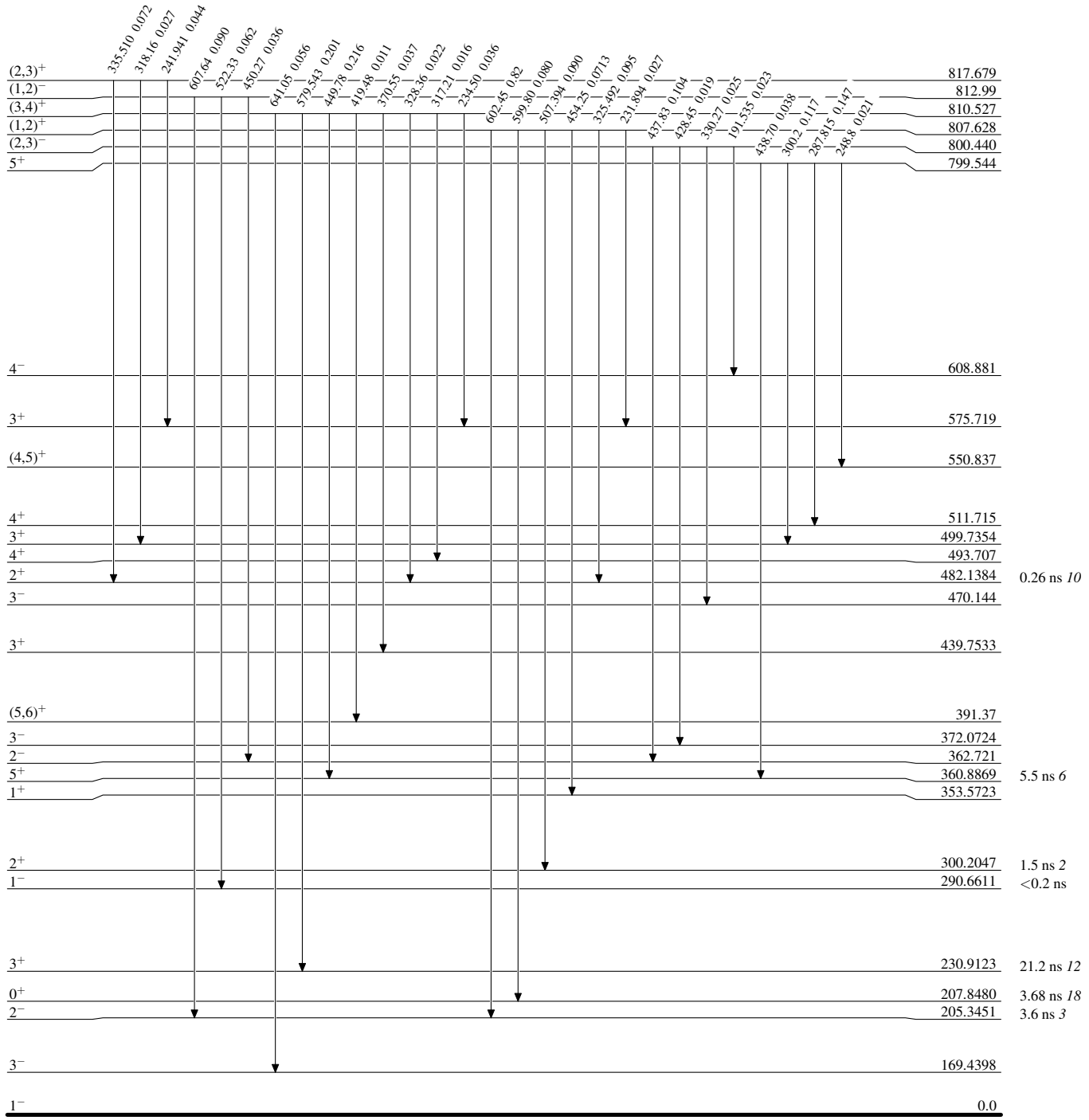
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$

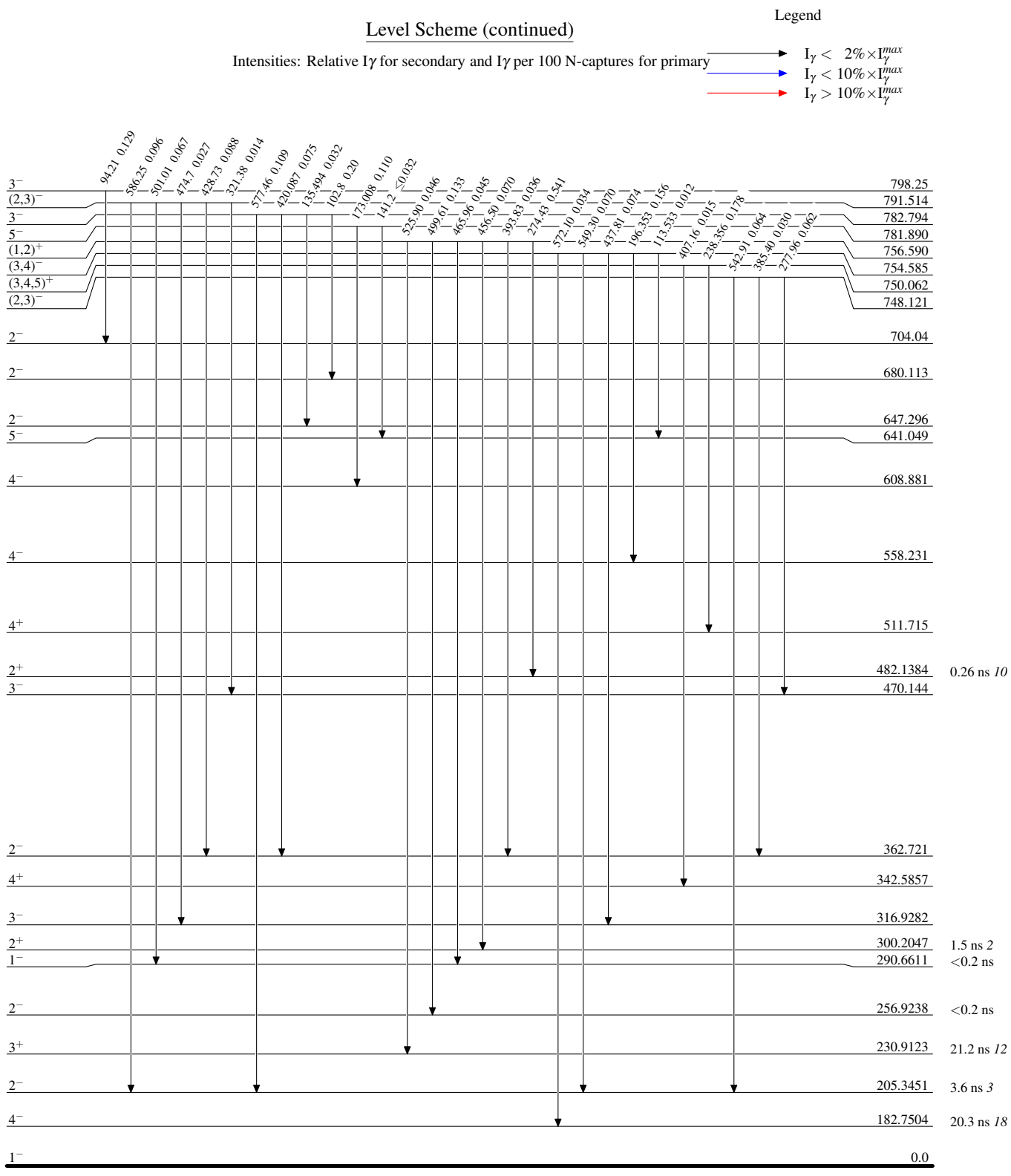


$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary



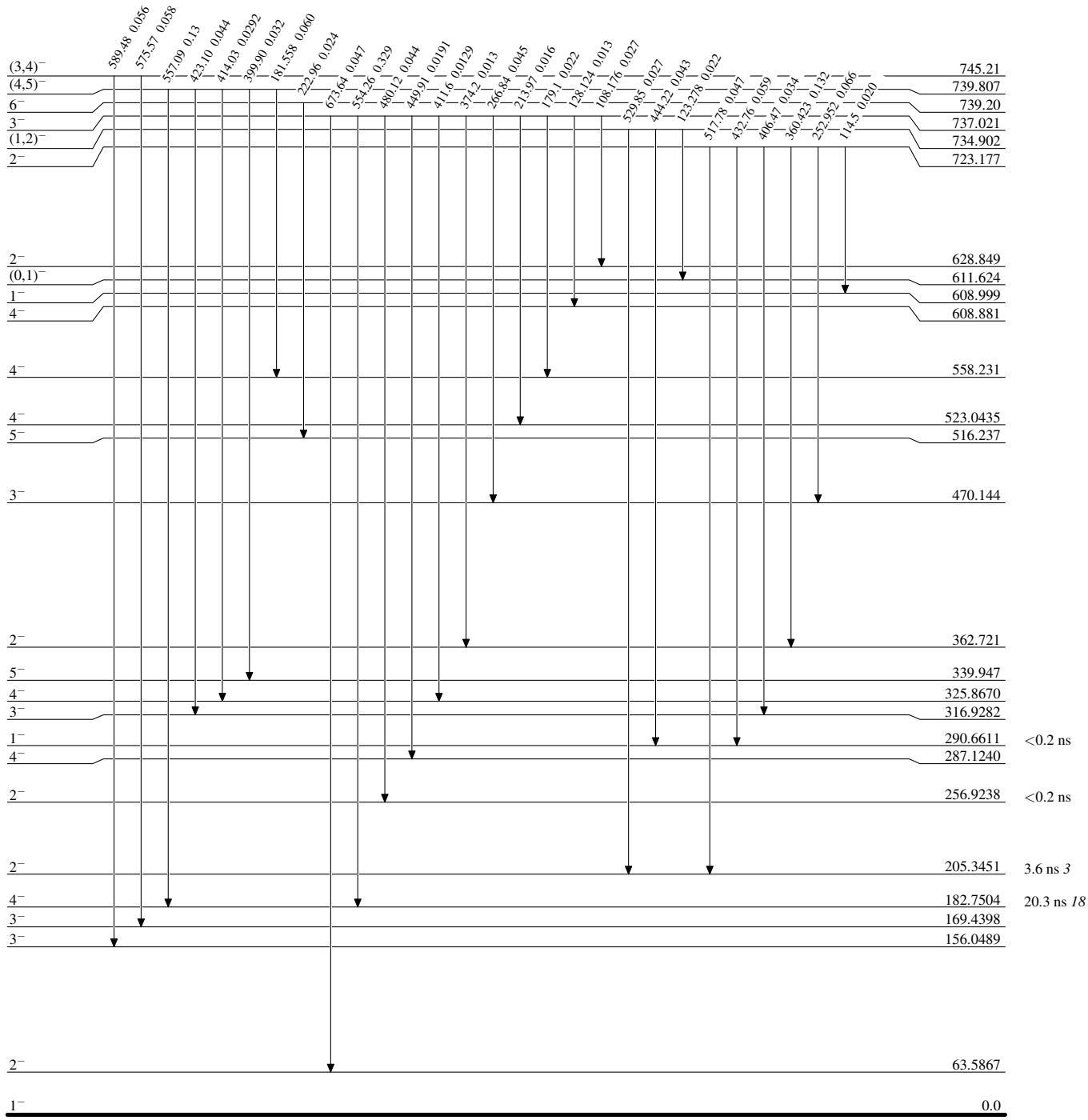
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



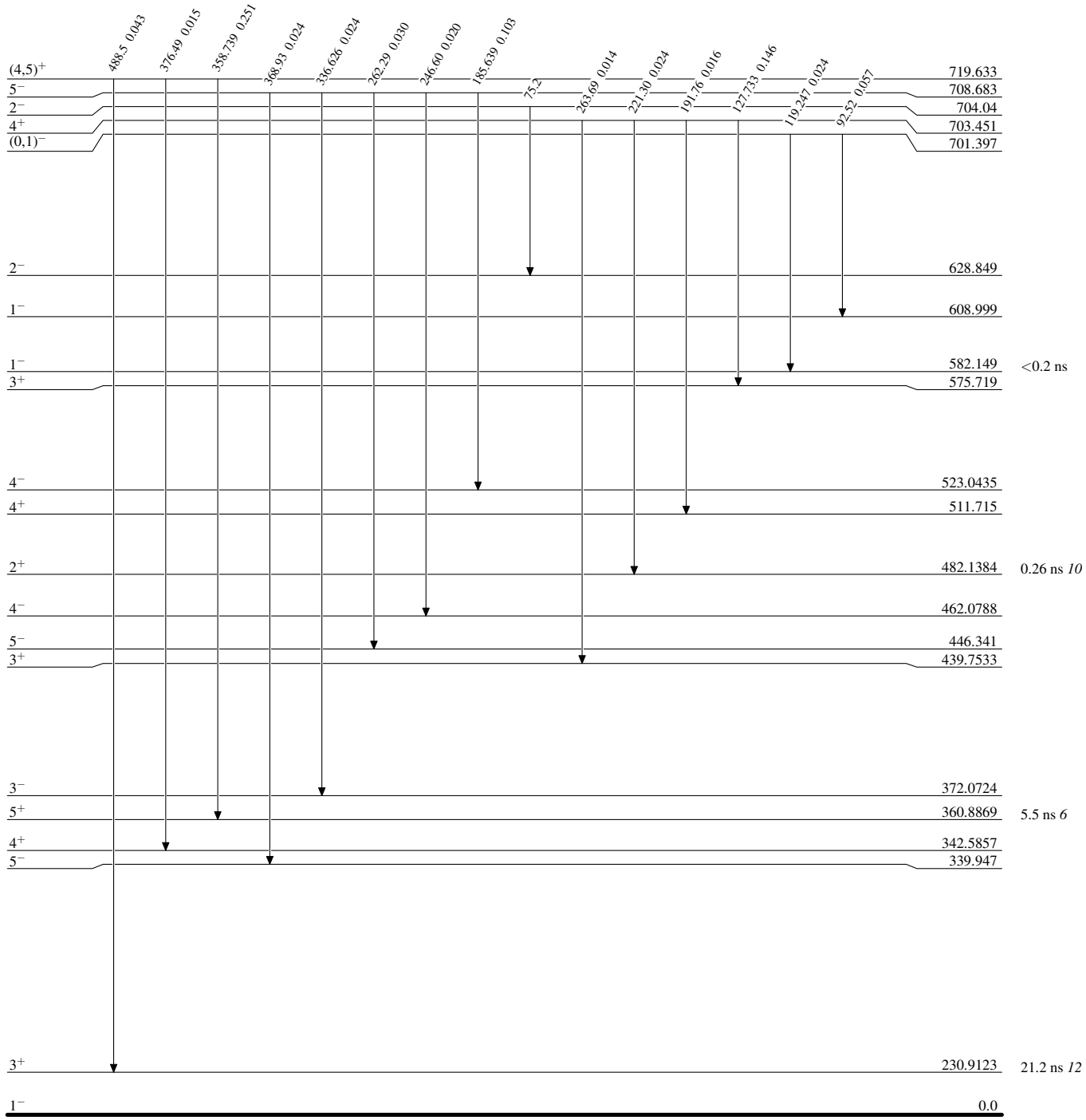
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



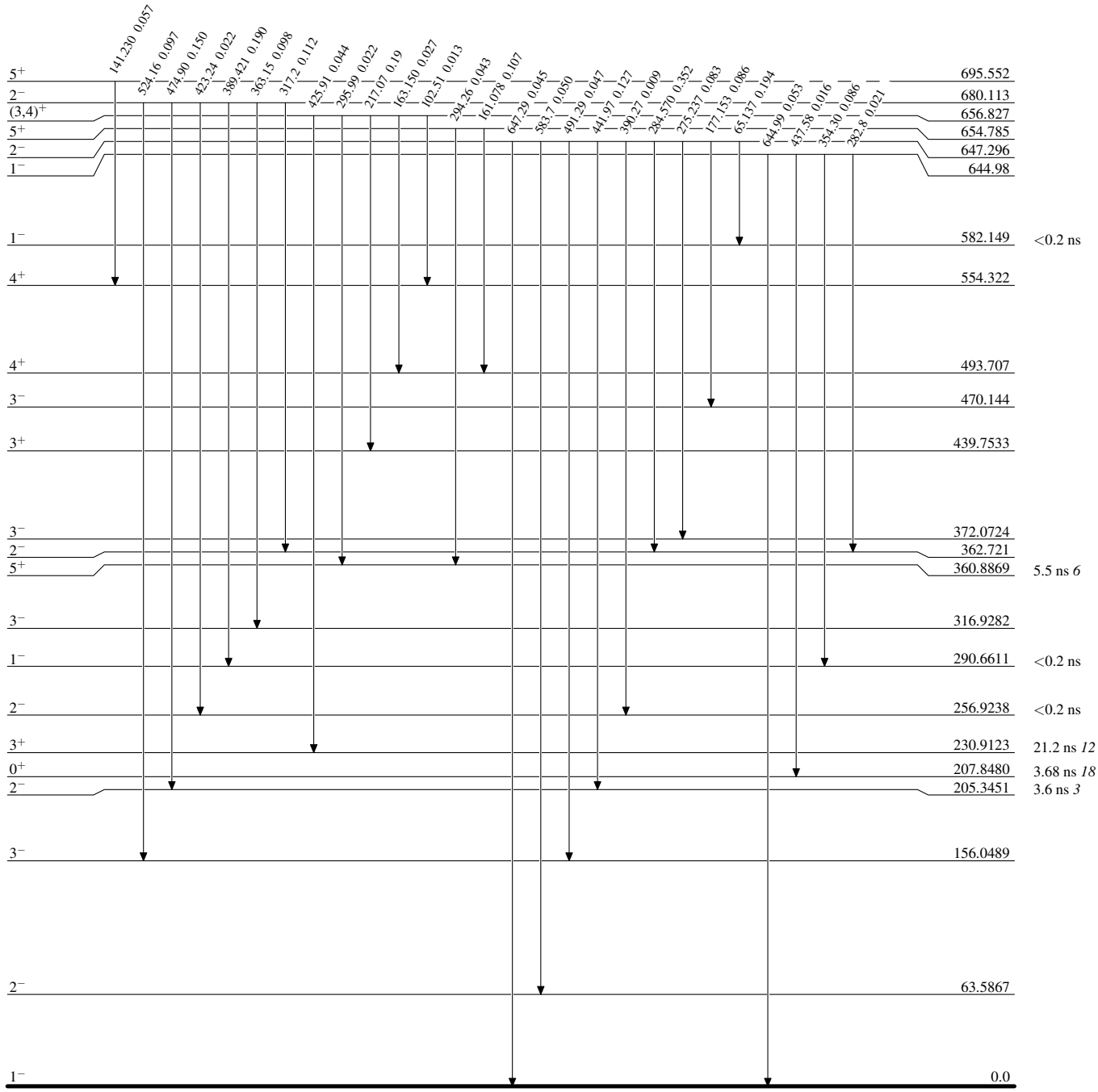
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



$^{188}_{75}Re_{113}$

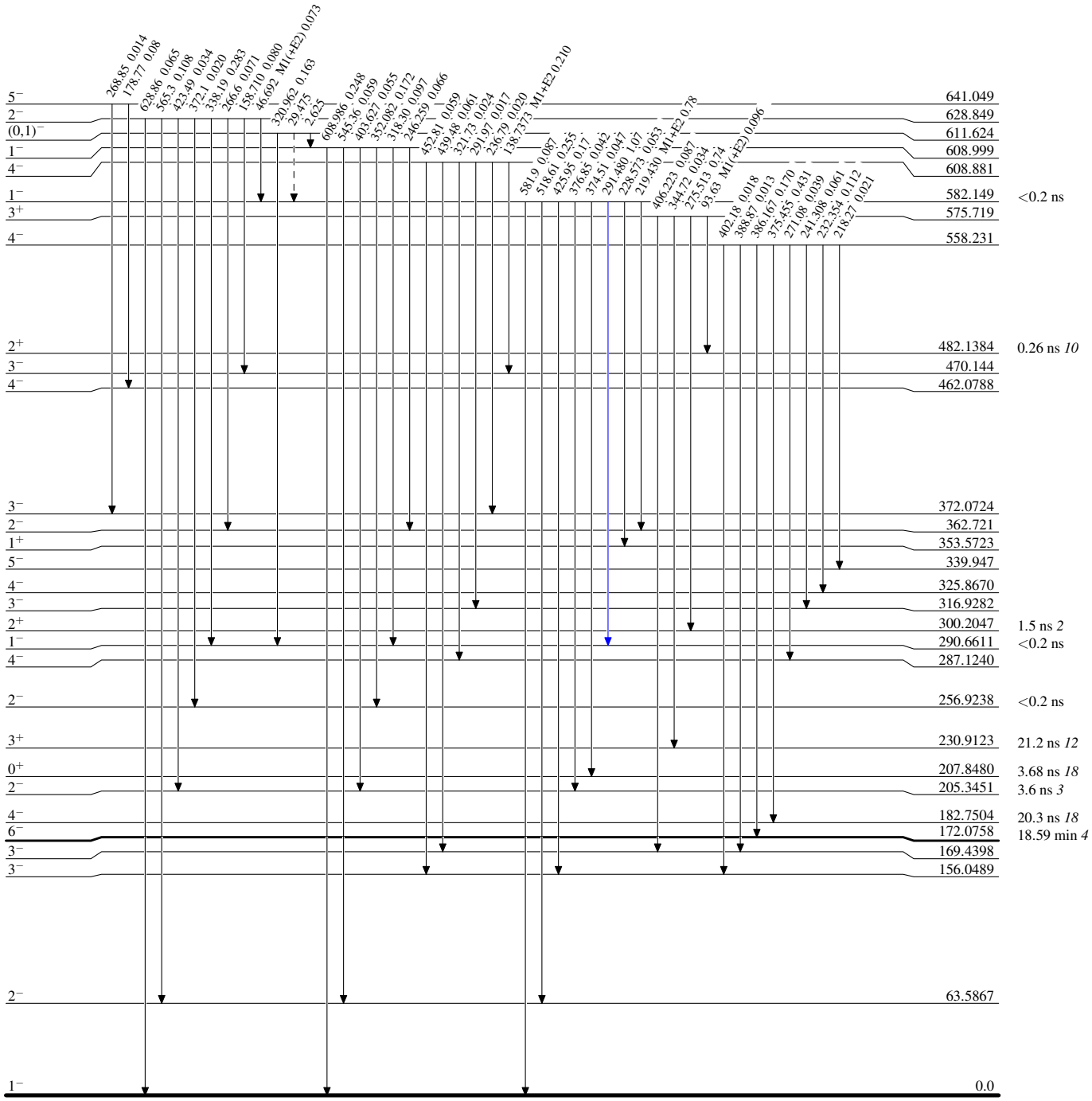
^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

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)

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary



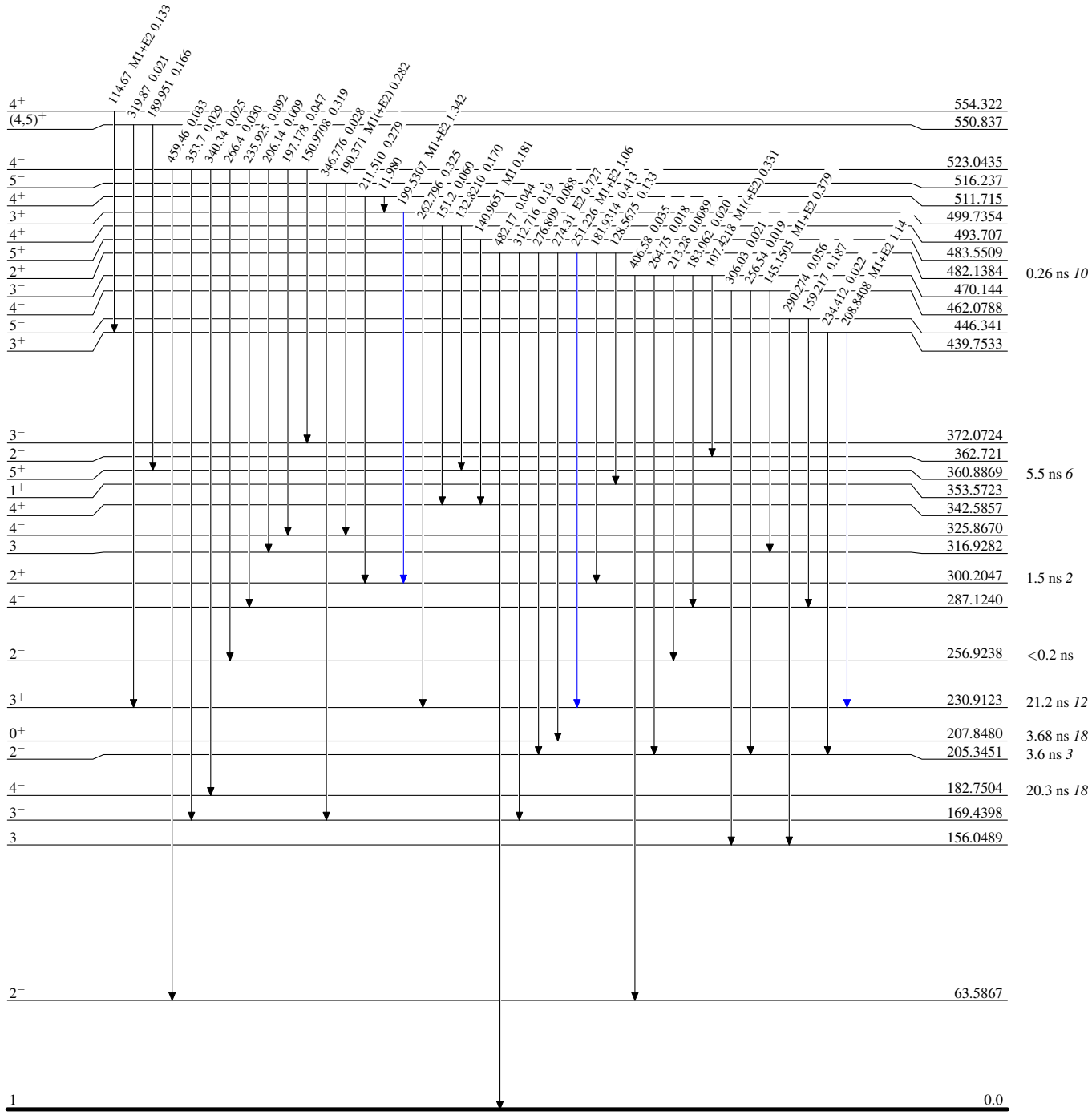
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

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)



$^{188}_{75}Re_{113}$

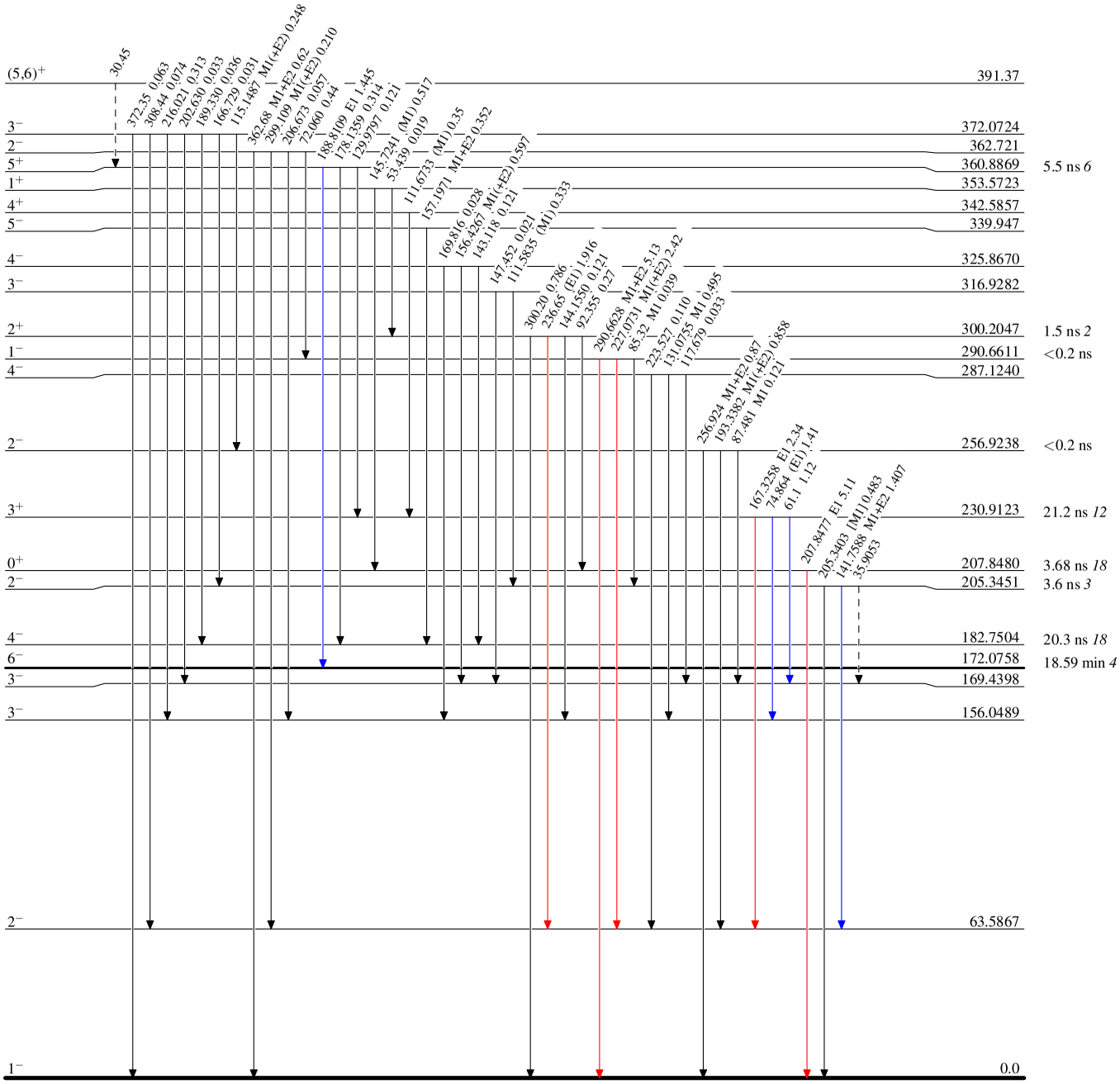
^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

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)

Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary

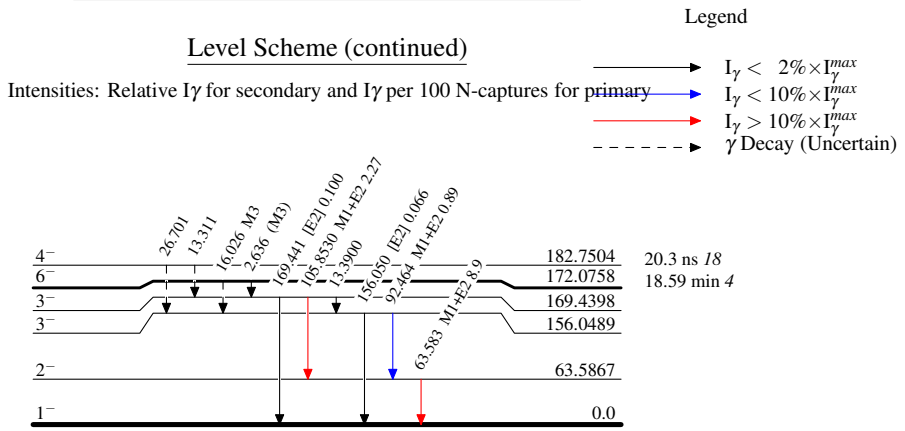


$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13

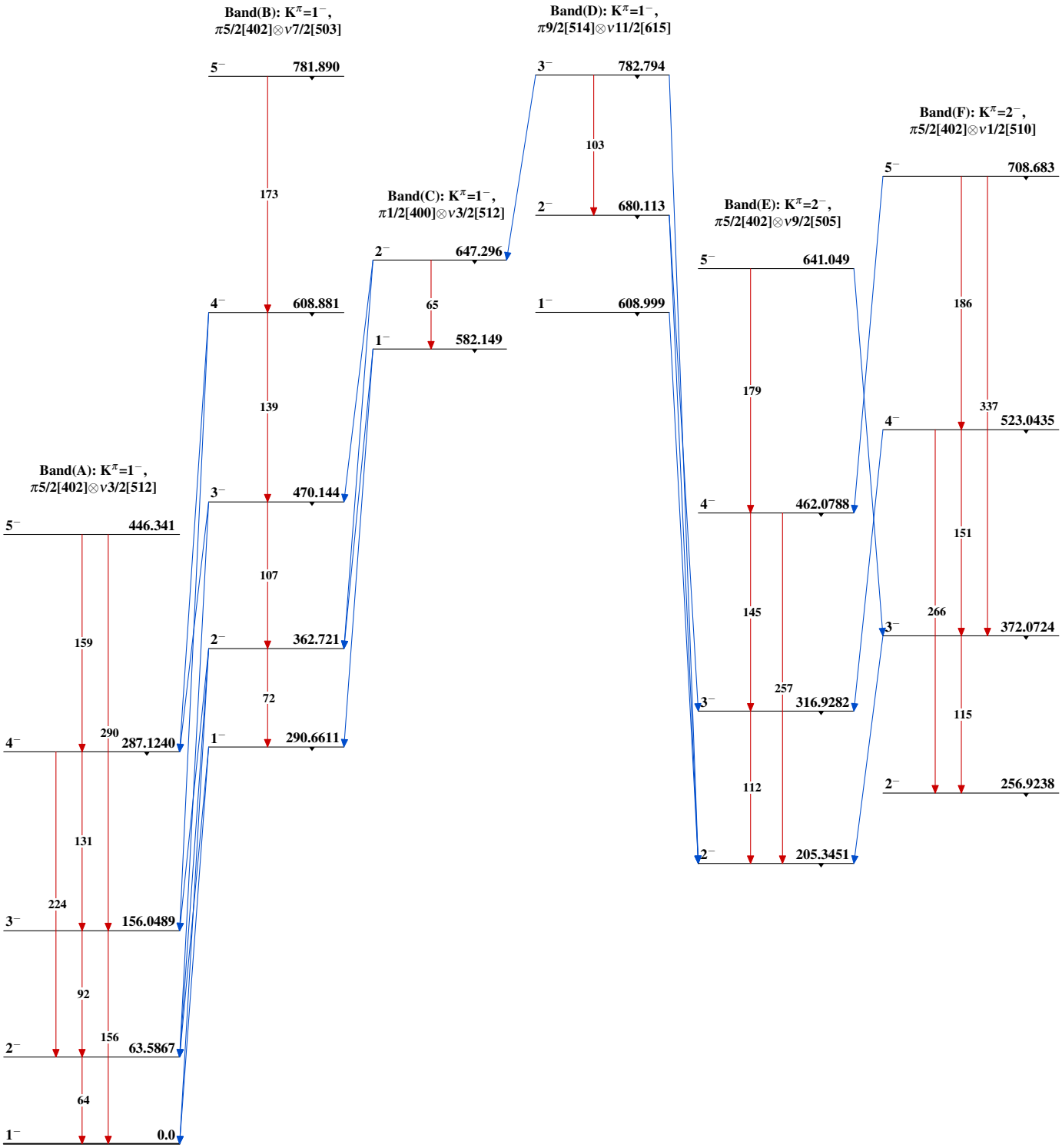
Level Scheme (continued)

Intensities: Relative Iγ for secondary and Iγ per 100 N-captures for primary



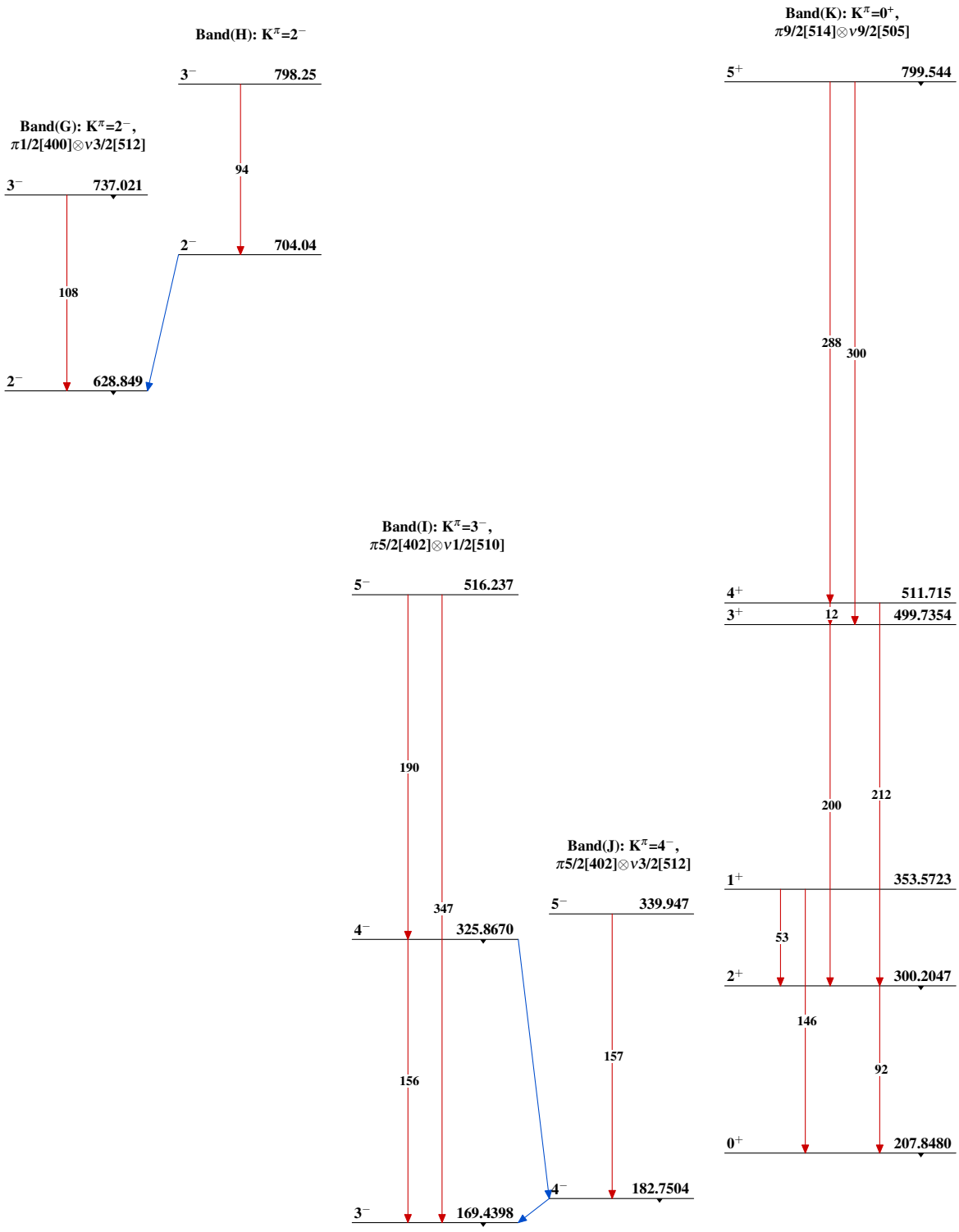
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13



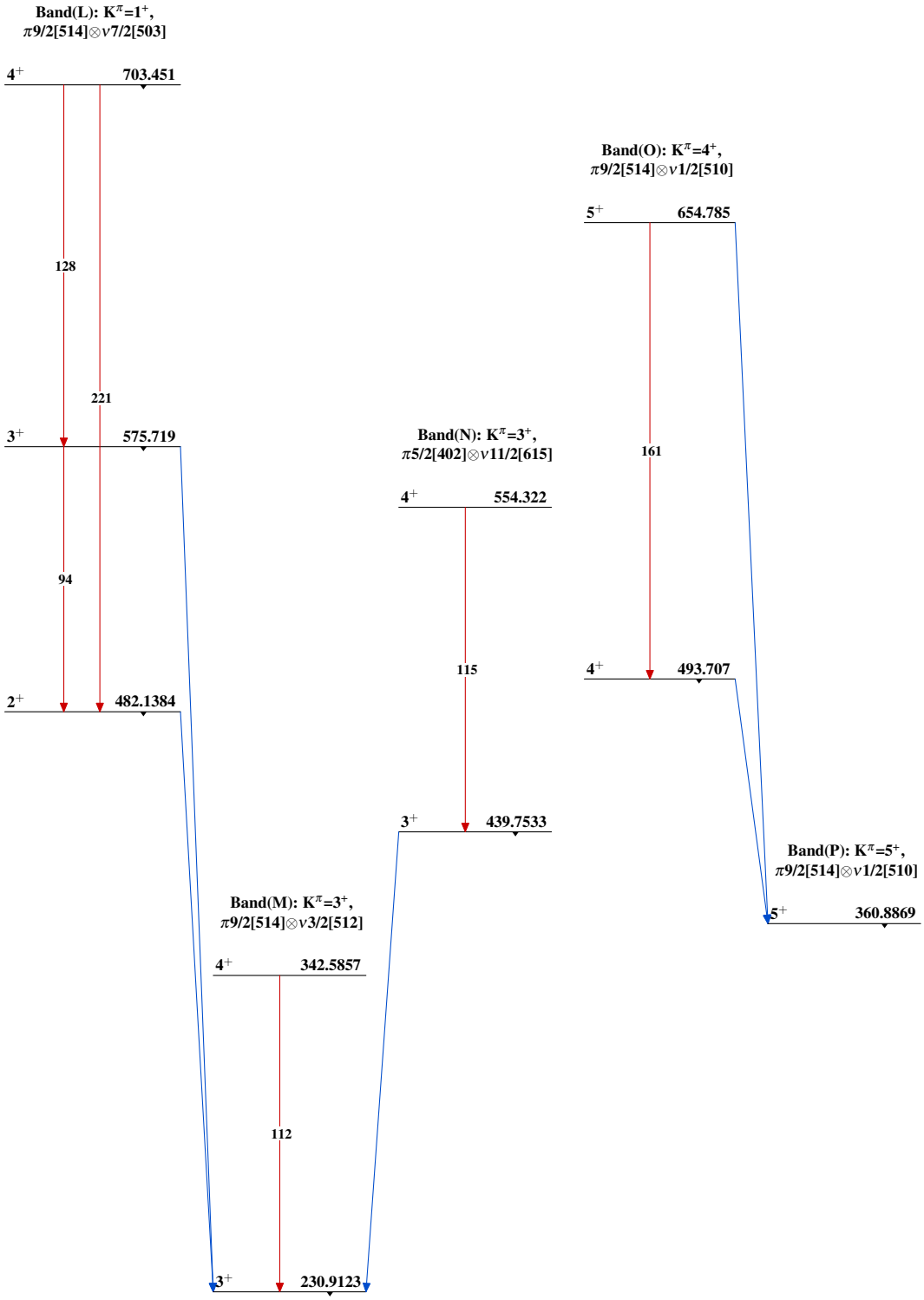
$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)



$^{188}_{75}Re_{113}$

^{187}Re(n,γ) E=th 2016Be02,2010Ba48,1972Sh13 (continued)



$^{188}_{75}Re_{113}$