Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Katakura	NDS 112,495 (2011)	1-Jan-2010

Q(β^-)=−1.04×10^4 *syst*; S(n)=1.30×10^4 *syst*; S(p)=4.×10^2 *syst*; Q(α)=1.8×10^3 *syst* 2012Wa38
Note: Current evaluation has used the following Q record −10293 SY12850 syst 377 syst 2065 syst 2009AuZZ.
ΔQ(β^-)=566, ΔS(n)=718, ΔS(p)=499, ΔQ(α)=643 (syst,2009AuZZ).
Q(εp)=5059 *405* (syst,2009AuZZ).
^{125}Pr isotope produced and identified by 1995Os03 in reaction ^{92}Mo(^{36}Ar,p2n) at 5.4 MeV/nucleon; measured $T_{1/2}$.

^{125}Pr Levels

Cross Reference (XREF) Flags

A ^{64}Zn(^{64}Zn,p2nγ)

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	XREF	Comments
0.0		3.3 s *7*		%ε+%β^+=100; %β^+p=? $T_{1/2}$: From 1995Os03. J$^\pi$: 3/2$^+$ proposed from systematics (1997Au04). The 0+x, (3/2$^+$) level in high-spin study may be the ground state.
0+x[@]	(3/2$^+$)		A	E(level): See comment on g.s.
0+y[#]	(7/2$^-$)		A	
0+z[a]	(9/2$^+$)		A	
0+u			A	
0+v			A	
12.0+u[b] *15*			A	
104.7+x *13*	(7/2$^+$)		A	
106.0+y[#] *10*	(11/2$^-$)		A	
181.0+z[&] *8*	(11/2$^+$)		A	
264.0+u[b] *10*			A	
343.0+y[#] *15*	(15/2$^-$)		A	
347.0+x[@] *10*	(7/2$^+$)		A	
360.0+v[c] *10*			A	
389.0+z[a] *8*	(13/2$^+$)		A	
615.3+x[@] *13*	(11/2$^+$)		A	
623.0+z[&] *10*	(15/2$^+$)		A	
665.0+u[b] *15*			A	
694.0+v[c] *15*			A	
711.0+y[#] *18*	(19/2$^-$)		A	
880.0+z[a] *11*	(17/2$^+$)		A	
987.3+x[@] *17*	(15/2$^+$)		A	
1128.0+v[c] *18*			A	
1159.0+z[&] *12*	(19/2$^+$)		A	
1199.0+y[#] *20*	(23/2$^-$)		A	
1202.0+u[b] *18*			A	
1440.3+x[@] *20*	(19/2$^+$)		A	
1458.0+z[a] *13*	(21/2$^+$)		A	
1648.0+v[c] *20*			A	
1775.0+z[&] *13*	(23/2$^+$)		A	

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Adopted Levels, Gammas (continued)

^{125}Pr Levels (continued)

E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF
1793.0+y# *23*	(27/2⁻)	A	3661+v*c* *3*		A	6227+u*b* *3*		A
1860.0+u*b* *20*		A	3937+x@ *3*	(35/2⁺)	A	6318+v*c* *4*		A
1957.3+x@ *22*	(23/2⁺)	A	4017.0+z& *21*	(35/2⁺)	A	6333+z*a* *3*	(45/2⁺)	A
2110.0+z*a* *14*	(25/2⁺)	A	4105+y# *3*	(39/2⁻)	A	6652+x@ *4*	(47/2⁺)	A
2246.0+v*c* *23*		A	4345+u*b* *3*		A	6850+z?& *3*	(47/2⁺)	A
2461.0+z& *15*	(27/2⁺)	A	4444.0+z*a* *21*	(37/2⁺)	A	7136+y# *4*	(51/2⁻)	A
2481.0+y# *25*	(31/2⁻)	A	4473+v*c* *3*		A	7389+z?*a* *3*	(49/2⁺)	A
2539.3+x@ *24*	(27/2⁺)	A	4762+x@ *3*	(39/2⁺)	A	7705+x@ *4*	(51/2⁺)	A
2619.0+u*b* *23*		A	4891.0+z& *23*	(39/2⁺)	A	8304+y# *4*	(55/2⁻)	A
2827.0+z*a* *16*	(29/2⁺)	A	5037+y# *3*	(43/2⁻)	A	8824+x@ *4*	(55/2⁺)	A
2918.0+v*c* *25*		A	5262+u*b* *3*		A	9550+y# *4*	(59/2⁻)	A
3197+x@ *3*	(31/2⁺)	A	5351.0+z*a* *24*	(41/2⁺)	A	10008+x@ *4*	(59/2⁺)	A
3209.0+z& *18*	(31/2⁺)	A	5359+v*c* *3*		A	10874+y# *4*	(63/2⁻)	A
3253+y# *3*	(35/2⁻)	A	5669+x@ *4*	(43/2⁺)	A	11261+x@ *4*	(63/2⁺)	A
3457.0+u*b* *25*		A	5836.0+z& *25*	(43/2⁺)	A	12279+y?# *4*	(67/2⁻)	A
3605.0+z*a* *19*	(33/2⁺)	A	6047+y# *4*	(47/2⁻)	A			

† From least-squares fit to Eγ's, assuming Δ(Eγ)=1 keV.
‡ As proposed by 2002Wi10, based on systematics and band structures.
# Band(A): $\pi h_{11/2}$, decoupled band.
@ Band(B): $\pi g_{7/2}$.
& Band(C): $\pi g_{9/2}^{-1}$, α=−1/2. Enhanced deformation structure.
a Band(c): $\pi g_{9/2}^{-1}$, α=+1/2. Enhanced deformation structure.
b Band(D): Band.
c Band(E): Band.

γ(^{125}Pr)

E_i(level)	J_i^π	E_γ	E_f	J_f^π	E_i(level)	J_i^π	E_γ	E_f	J_f^π
106.0+y	(11/2⁻)	106	0+y	(7/2⁻)	1128.0+v		434	694.0+v	
181.0+z	(11/2⁺)	181	0+z	(9/2⁺)	1159.0+z	(19/2⁺)	279	880.0+z	(17/2⁺)
264.0+u		252	12.0+u				536	623.0+z	(15/2⁺)
		264	0+u		1199.0+y	(23/2⁻)	488	711.0+y	(19/2⁻)
343.0+y	(15/2⁻)	237	106.0+y	(11/2⁻)	1202.0+u		537	665.0+u	
347.0+x	(7/2⁺)	242	104.7+x	(7/2⁺)	1440.3+x	(19/2⁺)	453	987.3+x	(15/2⁺)
		347	0+x	(3/2⁺)	1458.0+z	(21/2⁺)	299	1159.0+z	(19/2⁺)
360.0+v		360	0+v				578	880.0+z	(17/2⁺)
389.0+z	(13/2⁺)	208	181.0+z	(11/2⁺)	1648.0+v		520	1128.0+v	
		389	0+z	(9/2⁺)	1775.0+z	(23/2⁺)	317	1458.0+z	(21/2⁺)
615.3+x	(11/2⁺)	268	347.0+x	(7/2⁺)			616	1159.0+z	(19/2⁺)
		511	104.7+x	(7/2⁺)	1793.0+y	(27/2⁻)	594	1199.0+y	(23/2⁻)
623.0+z	(15/2⁺)	234	389.0+z	(13/2⁺)	1860.0+u		658	1202.0+u	
		442	181.0+z	(11/2⁺)	1957.3+x	(23/2⁺)	517	1440.3+x	(19/2⁺)
665.0+u		401	264.0+u		2110.0+z	(25/2⁺)	335	1775.0+z	(23/2⁺)
694.0+v		334	360.0+v				652	1458.0+z	(21/2⁺)
711.0+y	(19/2⁻)	368	343.0+y	(15/2⁻)	2246.0+v		598	1648.0+v	
880.0+z	(17/2⁺)	257	623.0+z	(15/2⁺)	2461.0+z	(27/2⁺)	351	2110.0+z	(25/2⁺)
		491	389.0+z	(13/2⁺)			686	1775.0+z	(23/2⁺)
987.3+x	(15/2⁺)	372	615.3+x	(11/2⁺)	2481.0+y	(31/2⁻)	688	1793.0+y	(27/2⁻)

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Adopted Levels, Gammas (continued)

γ(^{125}Pr) (continued)

E_i(level)	J_i^π	E_γ	E_f	J_f^π	E_i(level)	J_i^π	E_γ	E_f	J_f^π
2539.3+x	(27/2$^+$)	582	1957.3+x	(23/2$^+$)	5351.0+z	(41/2$^+$)	907	4444.0+z	(37/2$^+$)
2619.0+u		759	1860.0+u		5359+v		886	4473+v	
2827.0+z	(29/2$^+$)	366	2461.0+z	(27/2$^+$)	5669+x	(43/2$^+$)	907	4762+x	(39/2$^+$)
		717	2110.0+z	(25/2$^+$)	5836.0+z	(43/2$^+$)	945	4891.0+z	(39/2$^+$)
2918.0+v		672	2246.0+v		6047+y	(47/2$^-$)	1010	5037+y	(43/2$^-$)
3197+x	(31/2$^+$)	658	2539.3+x	(27/2$^+$)	6227+u		965	5262+u	
3209.0+z	(31/2$^+$)	748	2461.0+z	(27/2$^+$)	6318+v		959	5359+v	
3253+y	(35/2$^-$)	772	2481.0+y	(31/2$^-$)	6333+z	(45/2$^+$)	982	5351.0+z	(41/2$^+$)
3457.0+u		838	2619.0+u		6652+x	(47/2$^+$)	983	5669+x	(43/2$^+$)
3605.0+z	(33/2$^+$)	778	2827.0+z	(29/2$^+$)	6850+z?	(47/2$^+$)	1014[†]	5836.0+z	(43/2$^+$)
3661+v		743	2918.0+v		7136+y	(51/2$^-$)	1089	6047+y	(47/2$^-$)
3937+x	(35/2$^+$)	740	3197+x	(31/2$^+$)	7389+z?	(49/2$^+$)	1056[†]	6333+z	(45/2$^+$)
4017.0+z	(35/2$^+$)	808	3209.0+z	(31/2$^+$)	7705+x	(51/2$^+$)	1053	6652+x	(47/2$^+$)
4105+y	(39/2$^-$)	852	3253+y	(35/2$^-$)	8304+y	(55/2$^-$)	1168	7136+y	(51/2$^-$)
4345+u		888	3457.0+u		8824+x	(55/2$^+$)	1119	7705+x	(51/2$^+$)
4444.0+z	(37/2$^+$)	839	3605.0+z	(33/2$^+$)	9550+y	(59/2$^-$)	1246	8304+y	(55/2$^-$)
4473+v		812	3661+v		10008+x	(59/2$^+$)	1184	8824+x	(55/2$^+$)
4762+x	(39/2$^+$)	825	3937+x	(35/2$^+$)	10874+y	(63/2$^-$)	1324	9550+y	(59/2$^-$)
4891.0+z	(39/2$^+$)	874	4017.0+z	(35/2$^+$)	11261+x	(63/2$^+$)	1253	10008+x	(59/2$^+$)
5037+y	(43/2$^-$)	932	4105+y	(39/2$^-$)	12279+y?	(67/2$^-$)	1405[†]	10874+y	(63/2$^-$)
5262+u		917	4345+u						

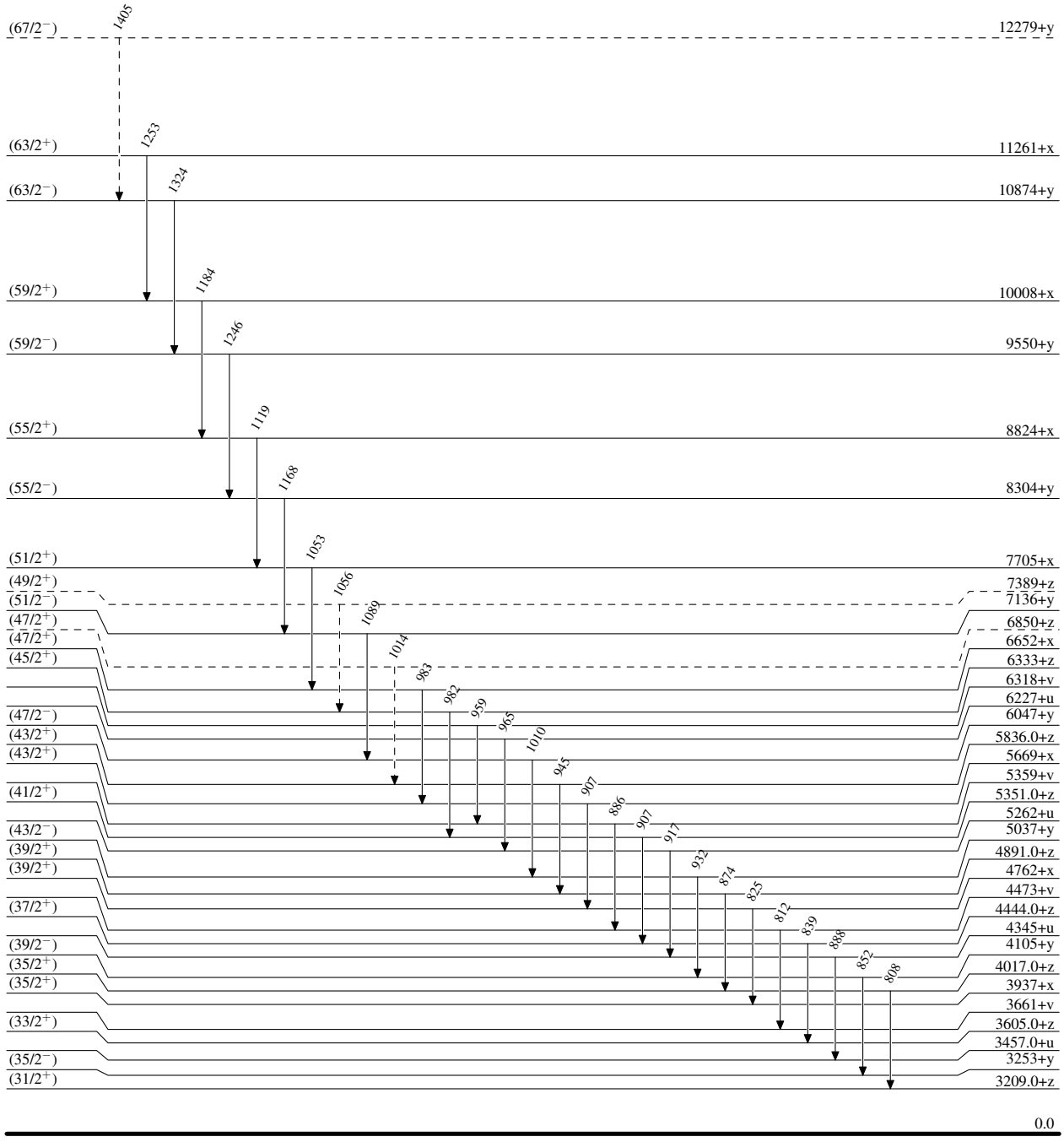
[†] Placement of transition in the level scheme is uncertain.

Legend

Adopted Levels, Gammas

Level Scheme

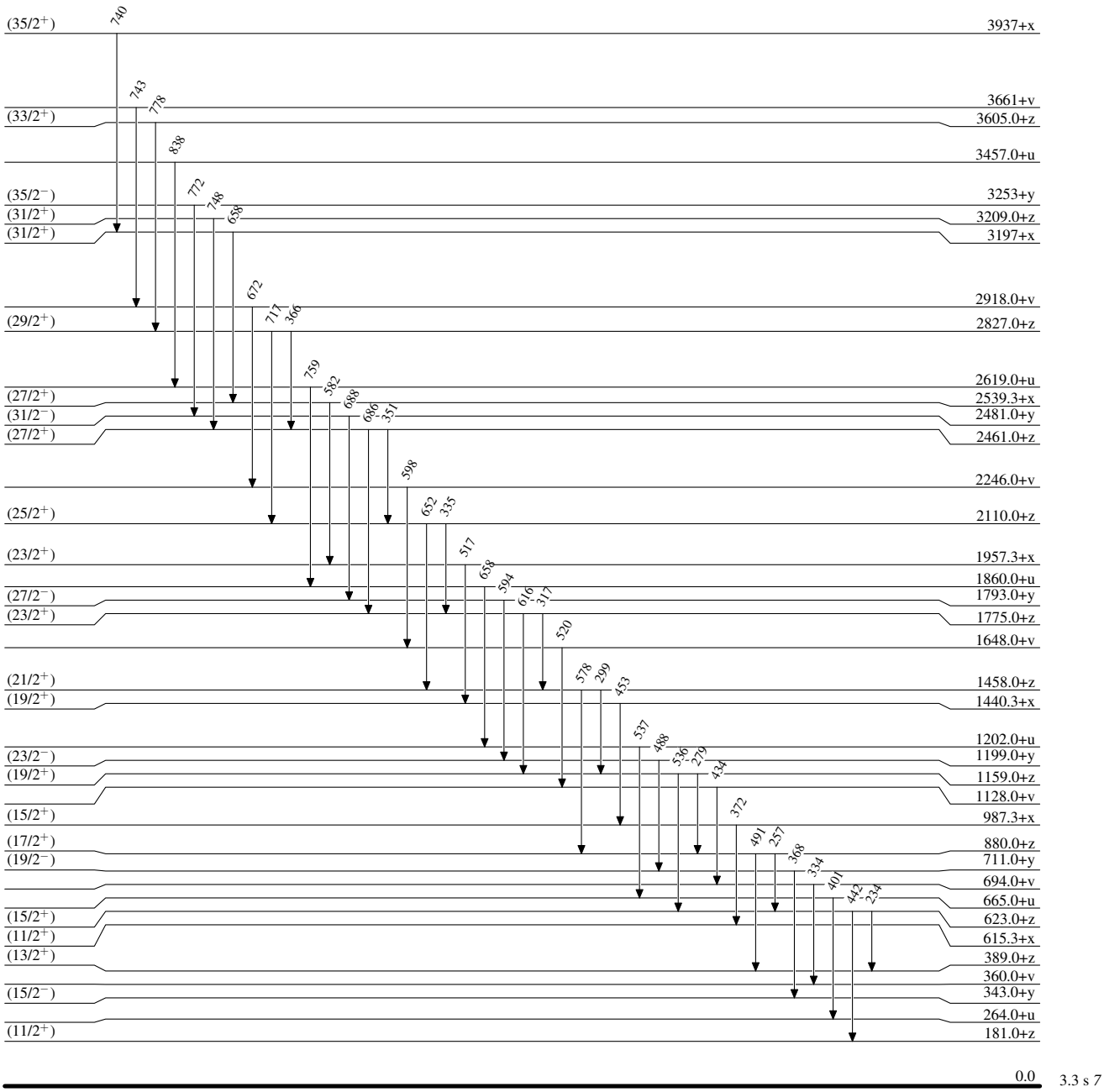
γ Decay (Uncertain)



$^{125}_{59}Pr_{66}$

Adopted Levels, Gammas

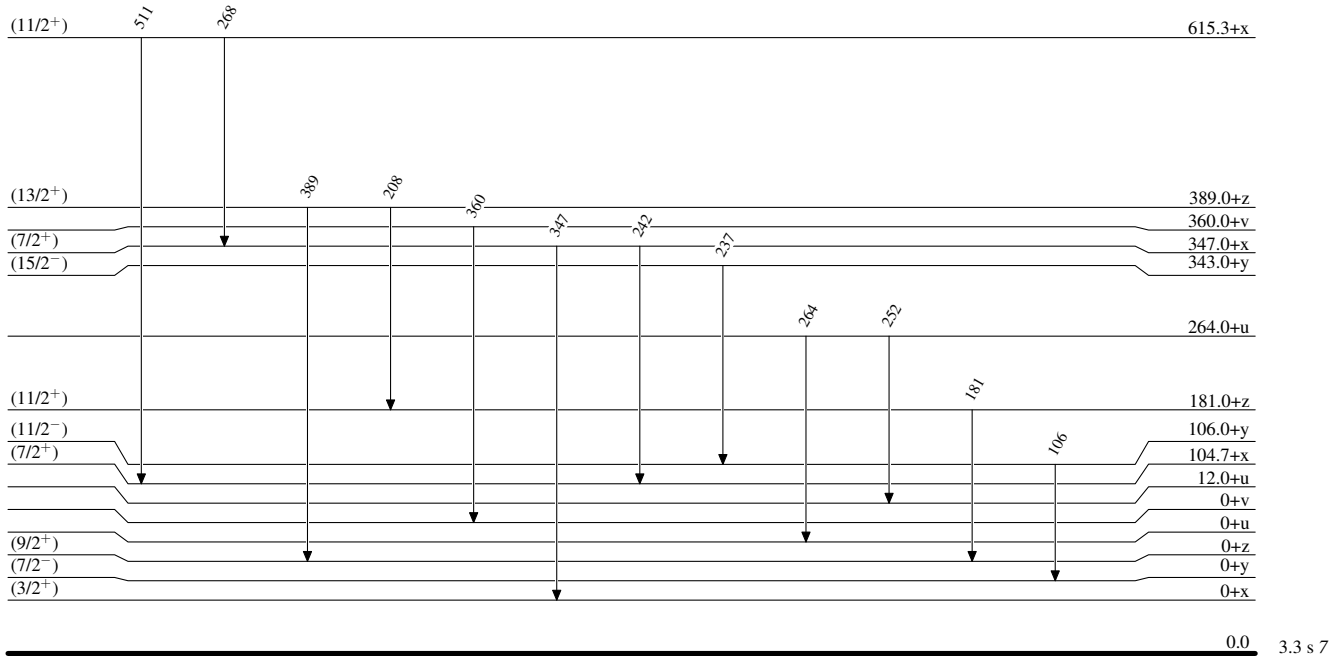
Level Scheme (continued)



$^{125}_{59}Pr_{66}$

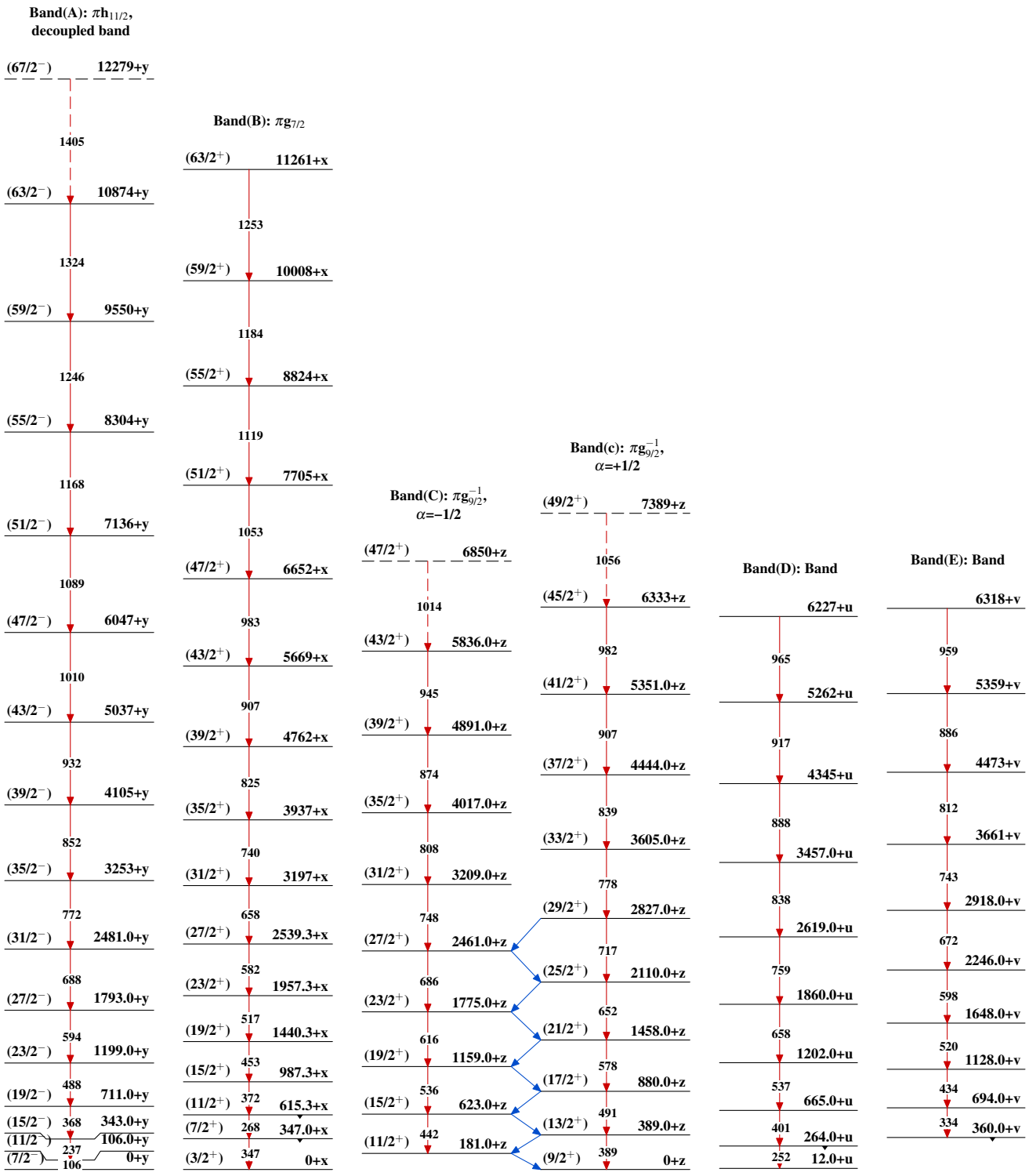
Adopted Levels, Gammas

Level Scheme (continued)



$^{125}_{59}Pr_{66}$

Adopted Levels, Gammas



$^{125}_{59}Pr_{66}$