Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	30-Sep-2020

Q(β^-)=−11370 *SY*; S(n)=11630 *40*; S(p)=4613 *8*; Q(α)=−3677 *10* 2017Wa10
Estimated uncertainty=200 keV for Q(β^-) (2017Wa10).
S(2n)=27330 *220*, S(2p)=8058 *11*, Q(εp)=3921 *9* (2017Wa10).
Identification and production of ^{77}Sr: 1976Ha29 (Chalk River).
Mass measurements (Penning trap): 2005Si34 (also 2004He32).
Hyperfine measurements (LASER spectroscopy): 1992Li11, 1992Li29.
Theoretical calculations: consult the NSR database at www.nndc.bnl.gov for six primary theory references dealing with nuclear structure calculations, and half-lives in radioactive decays.
Additional information 1.

^{77}Sr Levels

Cross Reference (XREF) Flags

A ^{77}Y ε decay (57 ms)
B ^{40}Ca(^{40}Ca,2pnγ)

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
0.0#	5/2(+)	9.0 s *2*	AB	%ε+%β^+=100; %εp=0.08 *3* (2000Gi11) μ=−0.348 *4* (1992Li11,2019StZV) Q=+1.27 *5* (1992Li11,2016St14) %εp: other: <0.25 (1976Ha29). Evaluated rms charge radius $<r^2>^{1/2}$=2.2569 fm *44* (2013An02). Evaluated $\delta<r^2>$(^{88}Sr,^{77}Sr)=0.253 fm^2 *12* (2013An02). $T_{1/2}$: from 1983Li11, γ decay curve. Other: 9.0 s *10* (1976Ha29). Jπ: measured hyperfine splitting using laser spectroscopy (1992Li11). Parity from possible ν5/2[422] configuration. μ,Q: fast ion-beam collinear LASER spectroscopy (1992Li11,1992Li29). Q=+1.40 *11* in 1992Li11 is re-evaluated to +1.27 *5* in 2016St14. $\Delta<r^2>$(^{88}Sr−^{77}Sr)=0.248 fm^2 *12*, charge radius=4.2544 fm *22* (1992Li11).
186.0@ *7*	(7/2+)		B	
418.2# *7*	(9/2+)		B	
612.8& *8*	(3/2−)		B	
725.9@ *9*	(11/2+)		B	
780.8a *9*	(5/2−)		B	
1010.6& *9*	(7/2−)		B	
1051.7# *10*	(13/2+)		B	
1289.9a *10*	(9/2−)		B	
1480.7@ *11*	(15/2+)		B	
1627.2& *11*	(11/2−)		B	
1883.9# *12*	(17/2+)		B	
1999.1a *12*	(13/2−)		B	
2432.2@ *13*	(19/2+)		B	
2437.1& *13*	(15/2−)		B	
2891.1a *14*	(17/2−)		B	
2894.0# *14*	(21/2+)		B	
3424.1& *15*	(19/2−)		B	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{77}Sr Levels (continued)

E(level)[†]	Jπ[‡]	XREF	E(level)[†]	Jπ[‡]	XREF	E(level)[†]	Jπ[‡]	XREF
3561.5[@] *14*	(23/2+)	B	5152.1[a] *20*	(25/2−)	B	6678.2[#] *21*	(33/2+)	B
3950.1[a] *17*	(21/2−)	B	5315.2[#] *18*	(29/2+)	B	8183.3[#] *23*	(37/2+)	B
4050.2[#] *15*	(25/2+)	B	5840.1[&] *21*	(27/2−)	B	9882[#] *3*	(41/2+)	B
4567.1[&] *18*	(23/2−)	B	6208.5[@] *20*	(31/2+)	B	11797[#] *3*	(45/2+)	B
4770.5[@] *18*	(27/2+)	B	6518.1[a] *22*	(29/2−)	B	13943[#] *3*	(49/2+)	B

[†] From least-squares fit to Eγ data, assuming 1 keV uncertainty for Eγ.
[‡] For excited states, assignments are from 1994Gr01 and are based on γγ(θ) (DCO) data (1994Gr01) and band associations. The details of the γγ(θ) measurements are not available, however.
[#] Band(A): $K^\pi=5/2^+,\alpha=+1/2$. Possible configuration=ν5/2[422].
[@] Band(a): $K^\pi=5/2^+,\alpha=-1/2$.
[&] Band(B): $K^\pi=(3/2^-),\alpha=-1/2$. Possible configuration=ν3/2[301].
[a] Band(b): $K^\pi=(3/2^-),\alpha=+1/2$.

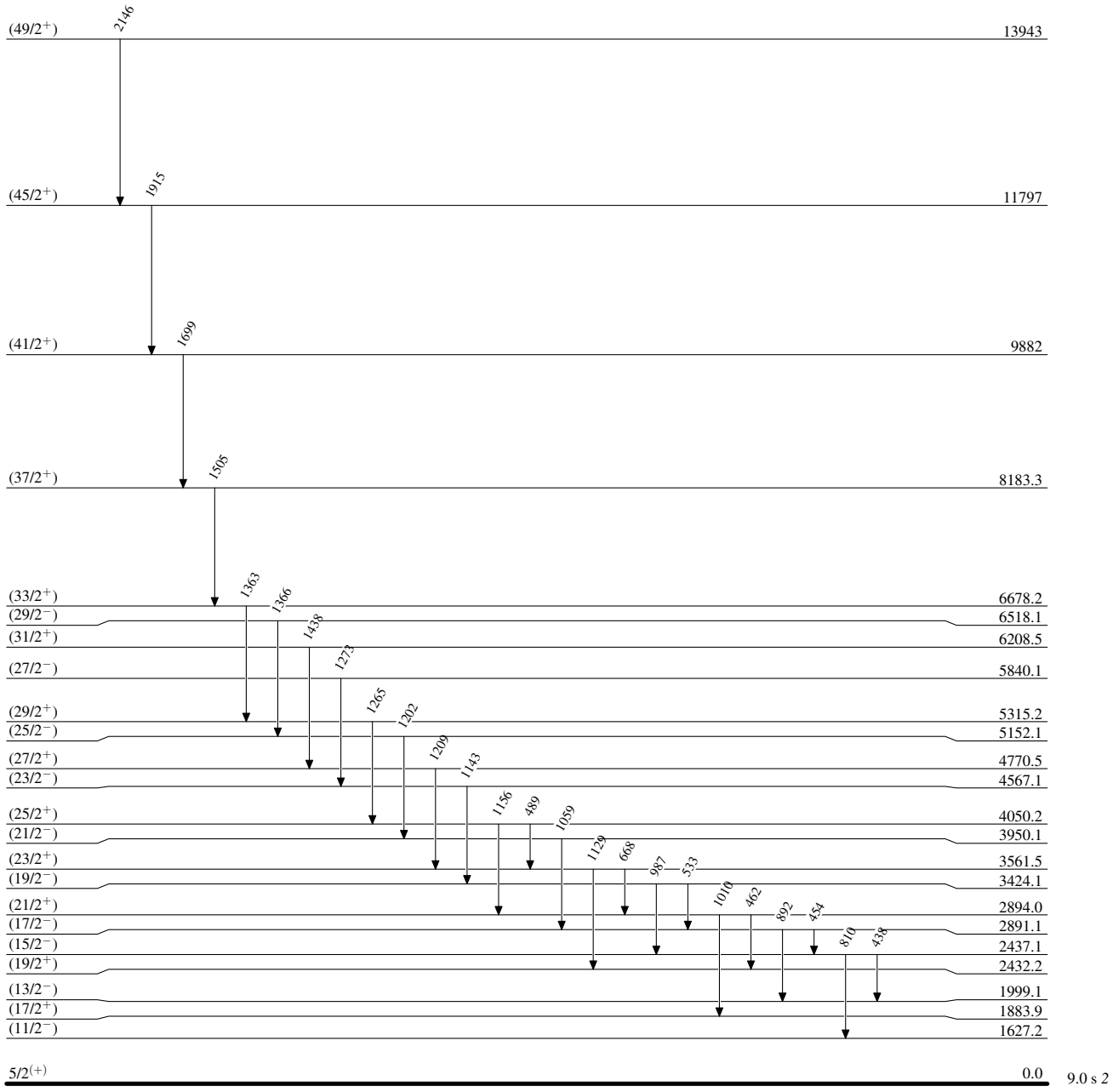
γ(^{77}Sr)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	E_i(level)	J_i^π	E_γ	E_f	J_f^π
186.0	(7/2+)	186	100	0.0	5/2(+)	2437.1	(15/2−)	438	1999.1	(13/2−)
418.2	(9/2+)	232		186.0	(7/2+)			810	1627.2	(11/2−)
		418		0.0	5/2(+)	2891.1	(17/2−)	454	2437.1	(15/2−)
612.8	(3/2−)	613		0.0	5/2(+)			892	1999.1	(13/2−)
725.9	(11/2+)	308		418.2	(9/2+)	2894.0	(21/2+)	462	2432.2	(19/2+)
		540		186.0	(7/2+)			1010	1883.9	(17/2+)
780.8	(5/2−)	168		612.8	(3/2−)	3424.1	(19/2−)	533	2891.1	(17/2−)
		595		186.0	(7/2+)			987	2437.1	(15/2−)
1010.6	(7/2−)	230		780.8	(5/2−)	3561.5	(23/2+)	668	2894.0	(21/2+)
		398		612.8	(3/2−)			1129	2432.2	(19/2+)
		592		418.2	(9/2+)	3950.1	(21/2−)	1059	2891.1	(17/2−)
1051.7	(13/2+)	326		725.9	(11/2+)	4050.2	(25/2+)	489	3561.5	(23/2+)
		633		418.2	(9/2+)			1156	2894.0	(21/2+)
1289.9	(9/2−)	279		1010.6	(7/2−)	4567.1	(23/2−)	1143	3424.1	(19/2−)
		509		780.8	(5/2−)	4770.5	(27/2+)	1209	3561.5	(23/2+)
1480.7	(15/2+)	429		1051.7	(13/2+)	5152.1	(25/2−)	1202	3950.1	(21/2−)
		755		725.9	(11/2+)	5315.2	(29/2+)	1265	4050.2	(25/2+)
1627.2	(11/2−)	337		1289.9	(9/2−)	5840.1	(27/2−)	1273	4567.1	(23/2−)
		617		1010.6	(7/2−)	6208.5	(31/2+)	1438	4770.5	(27/2+)
1883.9	(17/2+)	403		1480.7	(15/2+)	6518.1	(29/2−)	1366	5152.1	(25/2−)
		832		1051.7	(13/2+)	6678.2	(33/2+)	1363	5315.2	(29/2+)
1999.1	(13/2−)	372		1627.2	(11/2−)	8183.3	(37/2+)	1505	6678.2	(33/2+)
		709		1289.9	(9/2−)	9882	(41/2+)	1699	8183.3	(37/2+)
2432.2	(19/2+)	548		1883.9	(17/2+)	11797	(45/2+)	1915	9882	(41/2+)
		952		1480.7	(15/2+)	13943	(49/2+)	2146	11797	(45/2+)

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

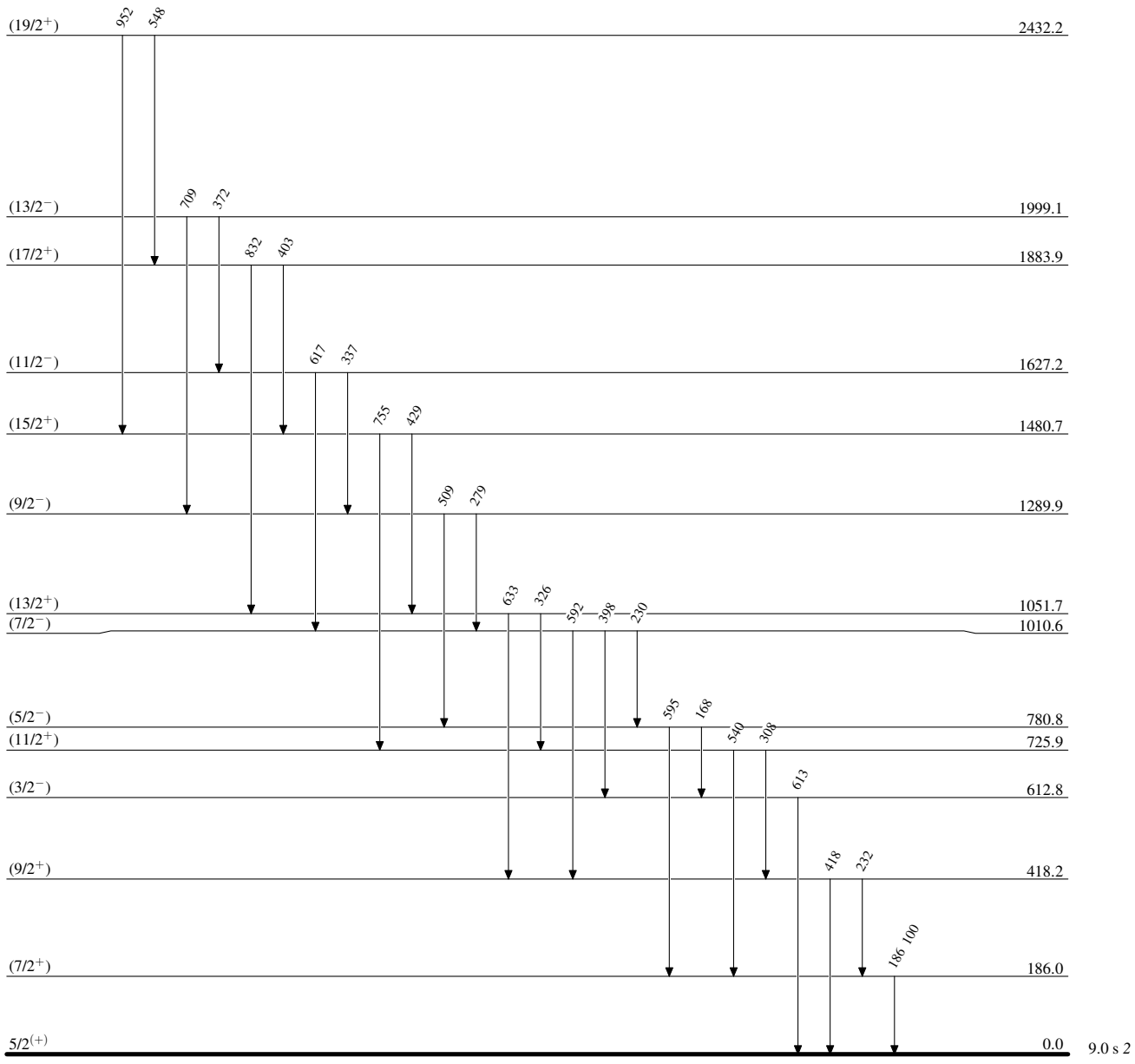


$^{77}_{38}Sr_{39}$

Adopted Levels, Gammas

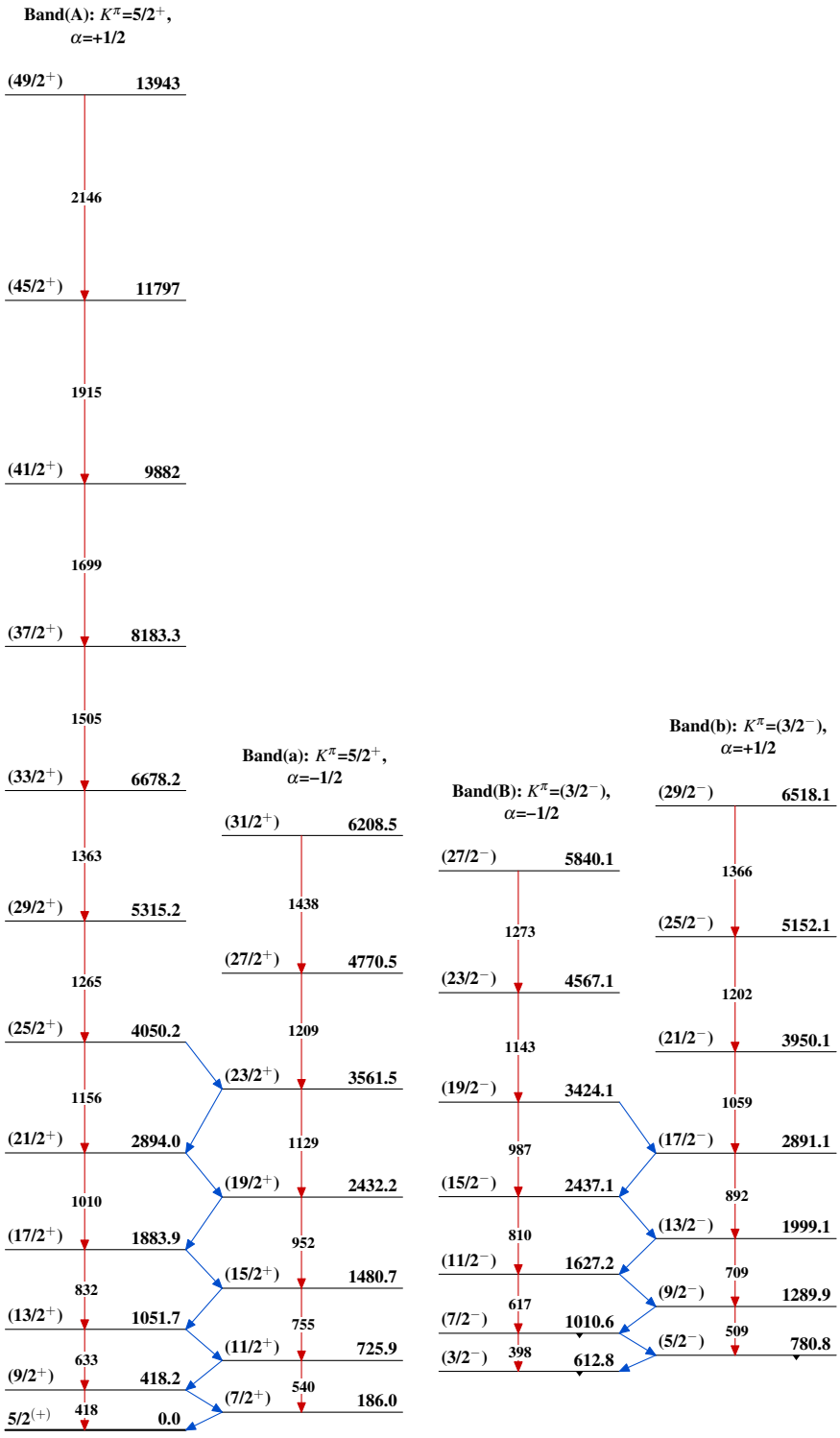
Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{77}_{38}Sr_{39}$

Adopted Levels, Gammas



$^{77}_{38}Sr_{39}$