^{40}Ca(^{32}S,3pγ) 2004St23

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 115, 1 (2014)	31-Jul-2013

2004St23: E=105 MeV ^{32}S beam on self supporting target ^{40}Ca and E=95 MeV ^{32}S beam on Au backed target ^{40}Ca. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma\gamma$, $\gamma(\theta)$(DCO) with the EUROBALL array consisting of 15 Cluster and 26 Clover composite Ge detectors each surrounded by a bismuth germanate shield providing Compton suppression. Charged particles were detected using the 4π device EUCLIDES, composed of 40 ΔE-E Si telescopes with the five forward elements electrically segmented into four parts. The evaporated neutrons were detected with the Neutron Wall, consisting of 50 liquid scintillators covering the 1π section of EUROBALL. No evidence was found for superdeformation in ^{69}As in the very high counting statistics experiment of 2004St23.

2000Br38: E=105 MeV ^{32}S beam incident on natural Ca target at HRIBF. Measured Eγ and $\gamma\gamma$ using an array of five 'clover' detectors and six suppressed Ge detectors.

1997MiZY: 140 MeV ^{32}S beam incident on natural Ca target with Au backing. In-beam $\gamma\gamma$ coincidence measurements was done with JAERI mini crystal ball with 11 anti-compton Ge spectrometer in combination with 21 Si charged particles detectors. Measured data or their uncertainties are not given by authors.

1974No08: E=100 MeV ^{32}S beam incident on Ca target. Measurements of Eγ, Iγ and $\gamma\gamma$ coincidences were performed with Ge(Li) detectors.

Data are the high statistics measurement of 2004St23.

^{69}As Levels

E(level)[†]	J$^\pi$	Comments
0.0[d]	5/2$^-$	
98.20[c] *20*	3/2$^-$	
863.22[d] *20*	7/2$^-$	
1216.32[c] *16*	7/2$^-$	
1305.61[‡] *18*	9/2$^+$	
1470.32[f] *18*	9/2$^-$	
1534.02[g] *25*	(5/2$^+$)	
1987.53 *16*	7/2$^-$	
2159.41[‡] *19*	13/2$^+$	
2169.02[g] *21*	9/2$^{(+)}$	
2199.74 *23*	11/2$^-$	
2210.72[#] *25*	11/2$^+$	
2311.23[e] *17*	9/2$^-$	
2627.63[c] *16*	11/2$^-$	
2777.14[f] *20*	13/2$^-$	
2808.03[g] *20*	13/2$^+$	
3045.44[e] *19*	13/2$^-$	J$^\pi$: Tentative assignment (13/2$^+$) in ^{58}Ni(^{14}N,2pnγ) based on assumption of rotational band built on the 2311 level assigned as J^π=9/2$^+$.
3257.03[‡] *21*	17/2$^+$	
3263.23[#] *22*	15/2$^+$	
3418.54[c] *18*	15/2$^-$	
3507.13 *22*	15/2$^+$	
3660.43 *21*	17/2$^+$	
3840.24[g] *22*	17/2$^+$	
3844.65[e] *20*	17/2$^-$	E(level): could also be a member of 9/2$^-$ band based on 1470 level.
3947.80 *23*	15/2$^-$	
4148.24 *22*	17/2$^+$	
4306.1[#] *3*	(19/2$^+$)	
4356.2[c] *3*	19/2$^-$	
4461.24[‡] *23*	21/2$^+$	

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^{40}Ca(^{32}S,3pγ) 2004St23 (continued)

^{69}As Levels (continued)

E(level)†	Jπ	E(level)†	Jπ	E(level)†	Jπ	E(level)†	Jπ
4488.75[b] *21*	19/2−	6089.3[f] *4*	25/2−	8142.9[b] *7*	31/2−	11434.7[c] *11*	39/2−
4554.05 *20*	19/2−	6359.7[@] *5*	29/2+	8185.9[c] *9*	31/2−	11551.9[e] *9*	41/2−
4652.95[e] *24*	21/2−	6369.4[&] *4*	29/2+	8382.4 *4*	29/2+	11977.3[&] *9*	41/2+
4713.3 *6*		6571.6[b] *5*	27/2−	8455.4 *4*	(29/2+)	12677.3[f] *9*	(41/2−)
4847.3[f] *3*	21/2−	6742.1[c] *7*	27/2−	8641.6[e] *5*	33/2−	13325.2[c] *12*	(43/2−)
4929.45 *25*	21/2+	6847.3 *4*	25/2+	9095.5[f] *8*	(33/2−)	13546.0[e] *9*	45/2−
5150.0 *7*		7446.6[#] *5*	27/2+	9393.1[b] *9*	35/2−	13871.6[a] *10*	(45/2+)
5152.4 *3*		7448.4[e] *4*	29/2−	9472.2[@] *8*	37/2+	14567.1[&] *10*	(45/2+)
5193.3[&] *3*	25/2+	7519.6[f] *6*	29/2−	9738.6[c] *10*	35/2−	15765.1[a] *11*	(49/2+)
5245.66[b] *24*	23/2−	7614.6 *4*	29/2−	9819.4[&] *8*	37/2+	16005.8[e] *9*	(49/2−)
5452.5[c] *6*	23/2−	7627.3[‡] *4*	29/2+	9985.8[e] *7*	37/2−	18180.8[a] *12*	(53/2+)
5711.1[#] *4*	23/2+	7689.9 *4*	27/2+	10097.0 *6*	(33/2+)		
5918.4[e] *4*	25/2−	7716.8[@] *4*	33/2+	10795.9[f] *9*	(37/2−)		
5941.06[‡] *25*	25/2+	7896.6[&] *6*	33/2+	11180.4[b] *9*	39/2−		

† From least-squares fit to Eγ′s.
‡ Band(A): 9/2+ band.
# Band(a): 11/2+ band.
@ Band(B): 29/2+ band.
& Band(C): 25/2+ band.
a Band(D): (45/2+) band.
b Band(E): 19/2− band.
c Band(F): 3/2− band.
d Band(f): 5/2− band.
e Band(G): 9/2− band.
f Band(H): 9/2− band.
g Band(I): 5/2+ band.

γ(^{69}As)

Eγ	Iγ†	Ei(level)	Jiπ	Ef	Jfπ	Mult.‡	Comments
89.3 *2*	3.5 *10*	1305.61	9/2+	1216.32	7/2−	D	DCO=0.46 *6*
98.2 *3*	7.8 *3*	98.20	3/2−	0.0	5/2−	D+Q	DCO=0.50 *5*
153.3 *5*	0.16 *1*	3660.43	17/2+	3507.13	15/2+		
194.3 *3*	0.11 *2*	4847.3	21/2−	4652.95	21/2−	D[#]	DCO=0.54 *7*
228.4 *3*	0.22 *3*	1534.02	(5/2+)	1305.61	9/2+		
263.8 *2*	0.5 *1*	5193.3	25/2+	4929.45	21/2+		
268.3 *2*	0.12 *1*	3045.44	13/2−	2777.14	13/2−	D[#]	DCO=0.68 *9*
316.4 *2*	0.18 *3*	2627.63	11/2−	2311.23	9/2−	D+Q[#]	DCO=0.57 *13*
323.7 *3*	0.18 *4*	2311.23	9/2−	1987.53	7/2−	D+Q[#]	DCO=0.64 *13*
333.1 *3*	1.9 *6*	3840.24	17/2+	3507.13	15/2+	D+Q[#]	DCO=0.49 *23*
[x]334.4[&] *1*	5.3 *4*					D+Q[#]	DCO=0.51 *5*
340.5 *3*	0.8 *1*	4488.75	19/2−	4148.24	17/2+	D[#]	DCO=0.42 *3*
373.1 *4*	1.0 *2*	3418.54	15/2−	3045.44	13/2−		
[x]379.4[&] *3*	1.6 *1*						

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^{40}Ca(^{32}S,3pγ) 2004St23 (continued)

$\gamma(^{69}As)$ (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
397.2 *3*	0.17 *1*	3660.43	17/2$^+$	3263.23	15/2$^+$	D+Q[#]	DCO=0.57 *13*
398.4 *3*	1.13 *8*	5245.66	23/2$^-$	4847.3	21/2$^-$	D+Q[#]	DCO=0.51 *8*
403.4 *2*	2.7 *2*	3660.43	17/2$^+$	3257.03	17/2$^+$		
405.8 *3*	2.1 *5*	4554.05	19/2$^-$	4148.24	17/2$^+$		
417.8 *4*	0.41 *3*	3045.44	13/2$^-$	2627.63	11/2$^-$	D+Q[#]	DCO=0.52 *7*
426.1 *3*	0.17 *1*	3844.65	17/2$^-$	3418.54	15/2$^-$	D+Q[#]	DCO=0.76 *13*
436.7 *3*	<0.1	5150.0		4713.3			
442.4 *5*	92 *5*	1305.61	9/2$^+$	863.22	7/2$^-$	D	DCO=0.65 *5*
449.0 *4*	<0.1	3257.03	17/2$^+$	2808.03	13/2$^+$		
455.2 *5*	0.11 *3*	3263.23	15/2$^+$	2808.03	13/2$^+$		
465.9 *4*	<0.1	4306.1	(19/2$^+$)	3840.24	17/2$^+$		
468.2 *3*	<0.1	2627.63	11/2$^-$	2159.41	13/2$^+$	D	DCO=0.7 *3*
468.2 *1*	0.27 *2*	4929.45	21/2$^+$	4461.24	21/2$^+$		
477.9 *3*	0.62 *17*	6847.3	25/2$^+$	6369.4	29/2$^+$	Q	DCO=1.28 *13*
541.0 *3*	0.22 *3*	4488.75	19/2$^-$	3947.80	15/2$^-$	Q[#]	DCO=1.23 *25*
565.1 *5*	<0.1	4713.3		4148.24	17/2$^+$		
577.0 *4*	3.5 *12*	3840.24	17/2$^+$	3263.23	15/2$^+$	D+Q[#]	DCO=0.39 *6*
583.2 *4*	<0.1	3840.24	17/2$^+$	3257.03	17/2$^+$	D	
587.6 *3*	0.86 *6*	3844.65	17/2$^-$	3257.03	17/2$^+$	D[#]	DCO=1.25 *20*
592.7 *2*	2.8 *2*	5245.66	23/2$^-$	4652.95	21/2$^-$	D+Q[#]	DCO=0.36 *3*
597.3 *4*	3.6 *7*	2808.03	13/2$^+$	2210.72	11/2$^+$	D+Q[#]	DCO=0.34 *5*
598.3 *2*	3.1 *7*	5152.4		4554.05	19/2$^-$		
^{x}601.3[&] *2*	0.91 *6*					Q[#]	DCO=0.96 *17*
606.3 *3*	2.5 *8*	4554.05	19/2$^-$	3947.80	15/2$^-$		
635.0 *3*	0.33 *6*	2169.02	9/2$^{(+)}$	1534.02	(5/2$^+$)	(Q)[@]	DCO=2.2 *7*
639.0 *4*	1.2 *1*	2808.03	13/2$^+$	2169.02	9/2$^{(+)}$	Q[@]	DCO=1.7 *2*
640.1 *2*	0.2 *4*	2627.63	11/2$^-$	1987.53	7/2$^-$	Q[#]	DCO=1.3 *2*
641.1 *2*	0.25 *2*	4148.24	17/2$^+$	3507.13	15/2$^+$	D+Q[#]	DCO=0.80 *14*
641.4 *3*	1.7 *4*	3418.54	15/2$^-$	2777.14	13/2$^-$	D+Q[#]	DCO=0.67 *10*
644.1 *4*	<0.1	4488.75	19/2$^-$	3844.65	17/2$^-$		
645.7 *3*	0.12 *3*	4306.1	(19/2$^+$)	3660.43	17/2$^+$		
648.5 *2*	1.4 *2*	4488.75	19/2$^-$	3840.24	17/2$^+$	D[#]	DCO=0.55 *6*
648.6 *2*	2.1 *2*	2808.03	13/2$^+$	2159.41	13/2$^+$		
672.7 *5*	0.29 *2*	5918.4	25/2$^-$	5245.66	23/2$^-$	D+Q[#]	DCO=0.51 *9*
691.6 *4*	1.25 *9*	5245.66	23/2$^-$	4554.05	19/2$^-$	Q	DCO=0.9 *2*
692.5 *2*	0.12 *2*	8382.4	29/2$^+$	7689.9	27/2$^+$	D+Q[@]	DCO=0.50 *11*
699.1 *3*	<0.1	3507.13	15/2$^+$	2808.03	13/2$^+$		
709.4 *1*	0.17 *4*	4554.05	19/2$^-$	3844.65	17/2$^-$	D+Q[#]	DCO=0.33 *7*
732.1 *4*	58 *3*	5193.3	25/2$^+$	4461.24	21/2$^+$	Q	DCO=0.94 *6*
734.2 *4*	14.3 *17*	3045.44	13/2$^-$	2311.23	9/2$^-$	Q	DCO=1.15 *11*
756.9 *2*	1.35 *1*	5245.66	23/2$^-$	4488.75	19/2$^-$	Q	DCO=0.94 *13*
765.0 *4*	12 *3*	863.22	7/2$^-$	98.20	3/2$^-$	Q[@]	DCO=1.85 *15*
765.5 *3*	0.9 *2*	8455.4	(29/2$^+$)	7689.9	27/2$^+$		
790.9 *2*	7.6 *14*	3418.54	15/2$^-$	2627.63	11/2$^-$	Q	DCO=1.2 *1*
799.2 *3*	12.1 *12*	3844.65	17/2$^-$	3045.44	13/2$^-$	Q	DCO=1.01 *8*
808.3 *2*	6.3 *4*	4652.95	21/2$^-$	3844.65	17/2$^-$	Q	DCO=0.93 *8*
828.3 *4*	0.8 *1*	4488.75	19/2$^-$	3660.43	17/2$^+$	D[#]	DCO=0.53 *7*
842.6 *2*	1.8 *4*	7689.9	27/2$^+$	6847.3	25/2$^+$	D+Q[@]	DCO=0.45 *13*
843.6 *3*	0.43 *3*	6089.3	25/2$^-$	5245.66	23/2$^-$		
852.4 *3*	4.4 *3*	3660.43	17/2$^+$	2808.03	13/2$^+$	Q	DCO=1.24 *5*

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^{40}Ca(^{32}S,3pγ) 2004St23 (continued)

$\gamma(^{69}As)$ (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
853.8 *5*	100	2159.41	$13/2^+$	1305.61	$9/2^+$	Q	DCO=1.01 *6*
863.2 *5*	69 *3*	863.22	$7/2^-$	0.0	$5/2^-$	D+Q	DCO=0.61 *5*
885.0 *4*	0.14 *2*	4148.24	$17/2^+$	3263.23	$15/2^+$	D+Q[#]	DCO=0.56 *8*
886.0 *2*	3.2 *2*	3045.44	$13/2^-$	2159.41	$13/2^+$	D[#]	DCO=1.1 *1*
891.2 *2*	<0.1	4148.24	$17/2^+$	3257.03	$17/2^+$		
893.6 *3*	2.4 *4*	4554.05	$19/2^-$	3660.43	$17/2^+$	D[#]	DCO=0.39 *10*
902.3 *3*	1.00 *5*	3947.80	$15/2^-$	3045.44	$13/2^-$		
905.1 *3*	19.5 *10*	2210.72	$11/2^+$	1305.61	$9/2^+$	D+Q[#]	DCO=0.19 *4*
937.7 *2*	5.4 *3*	4356.2	$19/2^-$	3418.54	$15/2^-$	Q	DCO=1.23 *12*
952.7 *2*	0.20 *3*	2169.02	$9/2^{(+)}$	1216.32	$7/2^-$		
1002.6 *5*	2.3 *2*	4847.3	$21/2^-$	3844.65	$17/2^-$	Q	DCO=0.94 *7*
1005.6 *5*	1.5 *1*	2311.23	$9/2^-$	1305.61	$9/2^+$	D[#]	DCO=0.61 *6*
1027.0 *3*	1.1 *3*	8641.6	$33/2^-$	7614.6	$29/2^-$		
1032.2 *2*	5.7 *4*	3840.24	$17/2^+$	2808.03	$13/2^+$	Q	DCO=1.3 *1*
1042.9 *3*	0.24 *5*	4306.1	$(19/2^+)$	3263.23	$15/2^+$		
1052.5 *4*	1.55 *4*	3263.23	$15/2^+$	2210.72	$11/2^+$	Q[#]	DCO=1.08 *21*
1067.5 *2*	8.9 *8*	3844.65	$17/2^-$	2777.14	$13/2^-$	Q	DCO=1.01 *8*
1070.2 *3*	1.6 *1*	4488.75	$19/2^-$	3418.54	$15/2^-$	Q	DCO=1.04 *8*
1094.9 *4*	1.18 *9*	2311.23	$9/2^-$	1216.32	$7/2^-$		
1096.2 *5*	3.4 *2*	5452.5	$23/2^-$	4356.2	$19/2^-$	Q	DCO=0.94 *7* E_γ: $19/2^-$ to $15/2^-$ listed in table I of 2004St23 seems a misprint; shown as $23/2^-$ to $19/2^-$ in authors′ figure 3.
1097.6 *2*	90 *5*	3257.03	$17/2^+$	2159.41	$13/2^+$	Q	DCO=0.95 *6*
1099.2 *5*	5.6 *6*	4356.2	$19/2^-$	3257.03	$17/2^+$		
1103.8 *2*	1.9 *5*	3263.23	$15/2^+$	2159.41	$13/2^+$	D+Q[#]	DCO=0.19 *2*
1118.1 *3*	15.8 *10*	1216.32	$7/2^-$	98.20	$3/2^-$	Q[#]	DCO=1.36 *12*
1135.5 *2*	2.9 *12*	4554.05	$19/2^-$	3418.54	$15/2^-$	Q[#]	DCO=1.4 *3*
1136.2 *5*	6.0 *17*	6847.3	$25/2^+$	5711.1	$23/2^+$	D+Q	DCO=0.47 *7*
1166.4 *5*	12.5 *6*	6359.7	$29/2^+$	5193.3	$25/2^+$	Q	DCO=1.03 *19*
1176.1 *2*	25.4 *11*	6369.4	$29/2^+$	5193.3	$25/2^+$	Q	DCO=1.04 *12*
1193.2 *4*	2.9 *2*	8641.6	$33/2^-$	7448.4	$29/2^-$	Q	DCO=1.05 *9*
1204.2 *1*	68 *3*	4461.24	$21/2^+$	3257.03	$17/2^+$	Q	DCO=1.16 *7*
1216.3 *5*	6.9 *14*	1216.32	$7/2^-$	0.0	$5/2^-$	D+Q[#]	DCO=0.41 *6*
1218.8 *3*	2.1 *4*	3418.54	$15/2^-$	2199.74	$11/2^-$	Q[#]	DCO=0.77 *10*
1231.7 *5*	0.12 *2*	4488.75	$19/2^-$	3257.03	$17/2^+$	D	DCO=0.53 *11*
1242.0 *4*	1.6 *1*	6089.3	$25/2^-$	4847.3	$21/2^-$	Q	DCO=1.22 *14*
1249.9 *3*	17.4 *8*	5711.1	$23/2^+$	4461.24	$21/2^+$	D+Q	DCO=0.47 *5*
1250.2 *5*	0.18 *2*	9393.1	$35/2^-$	8142.9	$31/2^-$	Q	DCO=1.25 *17*
1259.1 *2*	6.1 *3*	3418.54	$15/2^-$	2159.41	$13/2^+$	D+Q	DCO=0.49 *6*
1265.4 *3*	4.0 *3*	5918.4	$25/2^-$	4652.95	$21/2^-$	Q	DCO=1.00 *8*
1289.6 *3*	2.5 *2*	6742.1	$27/2^-$	5452.5	$23/2^-$	Q	DCO=1.28 *13*
1296.4 *4*	0.32 *4*	3507.13	$15/2^+$	2210.72	$11/2^+$	Q	DCO=1.12 *6*
1297.0 *4*	1.4 *4*	4554.05	$19/2^-$	3257.03	$17/2^+$	D	DCO=0.54 *4*
1305.6 *4*	58 *6*	1305.61	$9/2^+$	0.0	$5/2^-$	Q	DCO=1.05 *7*
1305.8 *3*	2.1 *3*	2169.02	$9/2^{(+)}$	863.22	$7/2^-$	(D)[#@]	DCO=2.5 *3*
1306.8 *3*	11.4 *12*	2777.14	$13/2^-$	1470.32	$9/2^-$	Q	DCO=1.01 *8*
1320.5 *2*	4.9 *13*	7689.9	$27/2^+$	6369.4	$29/2^+$	D+Q	DCO=0.36 *5*
1322.0 *5*	2.4 *1*	2627.63	$11/2^-$	1305.61	$9/2^+$	D[#]	DCO=0.67 *6*
1325.9 *4*	1.1 *1*	6571.6	$27/2^-$	5245.66	$23/2^-$	Q	DCO=1.07 *8*
1336.5 *2*	4.1 *2*	2199.74	$11/2^-$	863.22	$7/2^-$	Q[#@]	DCO=2.3 *2*
1344.2 *5*	2.3 *2*	9985.8	$37/2^-$	8641.6	$33/2^-$	Q	DCO=1.03 *8*
1347.4 *3*	4.9 *3*	7716.8	$33/2^+$	6369.4	$29/2^+$	Q	DCO=1.2 *2*

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^{40}Ca(^{32}S,3pγ) 2004St23 (continued)

γ(^{69}As) (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
1347.7 *3*	0.24 *3*	3507.13	15/2$^+$	2159.41	13/2$^+$	D+Q[#]	DCO=0.41 *16*
1357.1 *2*	4.1 *2*	7716.8	33/2$^+$	6359.7	29/2$^+$	Q	DCO=1.32 *10*
1359.1 *3*	1.08 *8*	7448.4	29/2$^-$	6089.3	25/2$^-$		
1411.3 *1*	5.0 *3*	2627.63	11/2$^-$	1216.32	7/2$^-$	Q[#]	DCO=0.95 *18*
1430.3 *5*	0.73 *6*	7519.6	29/2$^-$	6089.3	25/2$^-$	Q	DCO=0.93 *10*
1435.8 *4*	3.1 *3*	1534.02	(5/2$^+$)	98.20	3/2$^-$		
1443.8 *6*	1.3 *2*	8185.9	31/2$^-$	6742.1	27/2$^-$	Q	DCO=1.06 *8*
1448.0 *4*	0.8 *5*	2311.23	9/2$^-$	863.22	7/2$^-$		
1470.3 *2*	18.9 *16*	1470.32	9/2$^-$	0.0	5/2$^-$	Q	DCO=0.98 *7*
1479.8 *1*	12.3 *5*	5941.06	25/2$^+$	4461.24	21/2$^+$	Q	DCO=0.84 *6*
1501.0 *3*	4.1 *3*	3660.43	17/2$^+$	2159.41	13/2$^+$	Q[#]	DCO=1.76 *14*
1502.4 *4*	4.7 *10*	2808.03	13/2$^+$	1305.61	9/2$^+$	Q[@]	DCO=2.1 *3*
1505.5 *6*	5.6 *7*	7446.6	27/2$^+$	5941.06	25/2$^+$	Q	DCO=0.35 *3*
1527.2 *4*	18.9 *8*	7896.6	33/2$^+$	6369.4	29/2$^+$	Q	DCO=1.15 *8*
1530.0 *4*	2.8 *2*	7448.4	29/2$^-$	5918.4	25/2$^-$	Q	DCO=1.49 *11*
1535.1 *5*	0.3 *1*	8382.4	29/2$^+$	6847.3	25/2$^+$	Q[@]	DCO=1.16 *13*
1552.7 *3*	0.8 *1*	9738.6	35/2$^-$	8185.9	31/2$^-$	Q	DCO=0.90 *8*
1566.1 *5*	2.3 *2*	11551.9	41/2$^-$	9985.8	37/2$^-$	Q	DCO=1.15 *10*
1571.3 *5*	0.64 *5*	8142.9	31/2$^-$	6571.6	27/2$^-$	Q	DCO=0.98 *10*
1575.9 *4*	0.6 *1*	9095.5	(33/2$^-$)	7519.6	29/2$^-$		
1608.1 *3*	2.0 *6*	8455.4	(29/2$^+$)	6847.3	25/2$^+$		
1641.6 *4*	3.9 *3*	10097.0	(33/2$^+$)	8455.4	(29/2$^+$)		E$_\gamma$: (29/2$^+$) to (25/2$^+$) listed in table I of 2004St23 seems a misprint; shown as (33/2$^+$) to (29/2$^+$) in authors' figure 3.
1672.4 *6*	1.2 *1*	4929.45	21/2$^+$	3257.03	17/2$^+$	Q	DCO=1.39 *14*
1680.8 *6*	1.9 *6*	3840.24	17/2$^+$	2159.41	13/2$^+$	Q[#]	DCO=1.2 *3*
1686.2 *3*	1.2 *2*	7627.3	29/2$^+$	5941.06	25/2$^+$	Q	DCO=1.2 *3*
1696.1 *6*	0.4 *1*	11434.7	39/2$^-$	9738.6	35/2$^-$	Q	DCO=1.5 *2*
1696.2 *3*	1.8 *6*	7614.6	29/2$^-$	5918.4	25/2$^-$	Q	DCO=1.43 *10*
1700.4 *4*	0.80 *5*	10795.9	(37/2$^-$)	9095.5	(33/2$^-$)		
1735.4 *5*	0.23 *3*	7446.6	27/2$^+$	5711.1	23/2$^+$		
1748.0 *4*	3.1 *4*	3947.80	15/2$^-$	2199.74	11/2$^-$	Q[#@]	DCO=2.9 *6*
1755.4 *7*	3.1 *2*	9472.2	37/2$^+$	7716.8	33/2$^+$	Q	DCO=0.97 *20*
1787.3 *3*	0.16 *2*	11180.4	39/2$^-$	9393.1	35/2$^-$	Q	DCO=1.2 *2*
1788.7 *4*	2.6 *3*	3947.80	15/2$^-$	2159.41	13/2$^+$	D[#]	DCO=0.44 *9*
1881.4 *2*	0.4 *1*	12677.3	(41/2$^-$)	10795.9	(37/2$^-$)		
1890.4 *3*	0.2 *1*	13325.2	(43/2$^-$)	11434.7	39/2$^-$		
1893.5 *5*	1.6 *4*	15765.1	(49/2$^+$)	13871.6	(45/2$^+$)		
1894.3 *4*	2.1 *3*	13871.6	(45/2$^+$)	11977.3	41/2$^+$		
1922.8 *6*	6.2 *3*	9819.4	37/2$^+$	7896.6	33/2$^+$	Q	DCO=1.4 *1*
1987.5 *2*	0.19 *1*	1987.53	7/2$^-$	0.0	5/2$^-$	D+Q[#]	DCO=0.42 *1*
1994.0 *2*	0.50 *6*	13546.0	45/2$^-$	11551.9	41/2$^-$	Q	DCO=0.96 *10*
2095.7 *7*	6.1 *17*	8455.4	(29/2$^+$)	6359.7	29/2$^+$	(D)	DCO=1.27 *11*
2157.8 *4*	2.9 *1*	11977.3	41/2$^+$	9819.4	37/2$^+$	Q	DCO=1.15 *14*
2311.2 *3*	6.4 *7*	2311.23	9/2$^-$	0.0	5/2$^-$	Q	DCO=1.08 *9*
2415.6 *2*	1.23 *6*	18180.8	(53/2$^+$)	15765.1	(49/2$^+$)		
2459.8 *3*	0.3 *2*	16005.8	(49/2$^-$)	13546.0	45/2$^-$		
2589.8 *3*	1.8 *4*	14567.1	(45/2$^+$)	11977.3	41/2$^+$		

[†] Relative intensities derived from the 3p-$\gamma\gamma$ matrix sorted from the experiment at E=105 MeV and normalized to Iγ(854γ)=100.
[‡] DCO ratios were determined in the E=105 MeV experiment, unless otherwise stated. The DCO's correspond to gates on ΔJ=2,

Continued on next page (footnotes at end of table)

^{40}Ca(^{32}S,3pγ) 2004St23 (continued)

γ(^{69}As) (continued)

quadrupole transitions, unless otherwise stated.
[#] DCO determined from the E=95 MeV experiment.
[@] DCO corresponds to gate on ΔJ=1, dipole or D+Q transition.
[&] γ placed from 3045 level in table I of 2004St23; but it does not fit in the level scheme, so the evaluator has listed this as an unplaced γ ray.
[x] γ ray not placed in level scheme.

$^{40}Ca(^{32}S,3p\gamma)$ 2004St23

Level Scheme

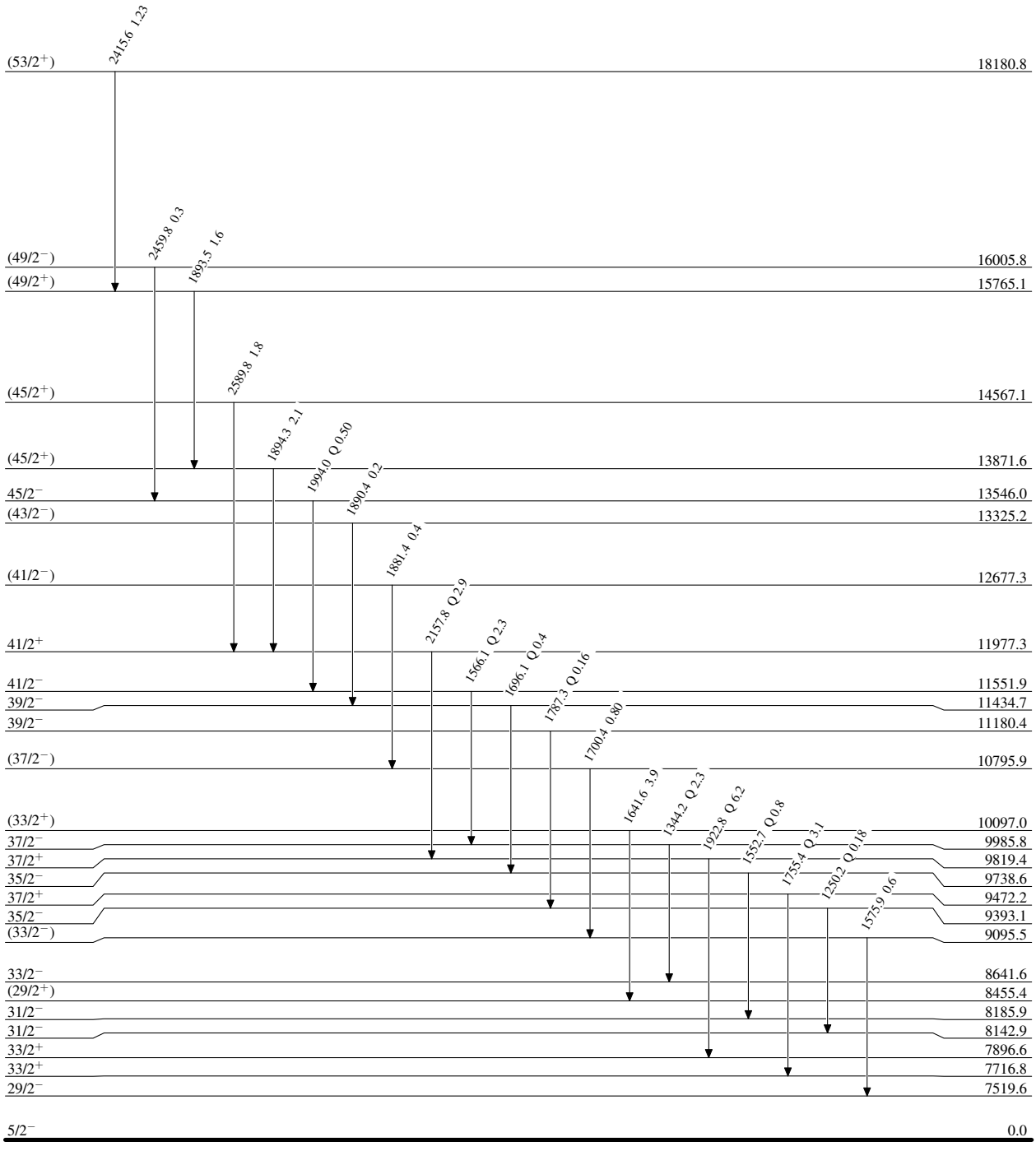
Intensities: Relative I_γ

Legend

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

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

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

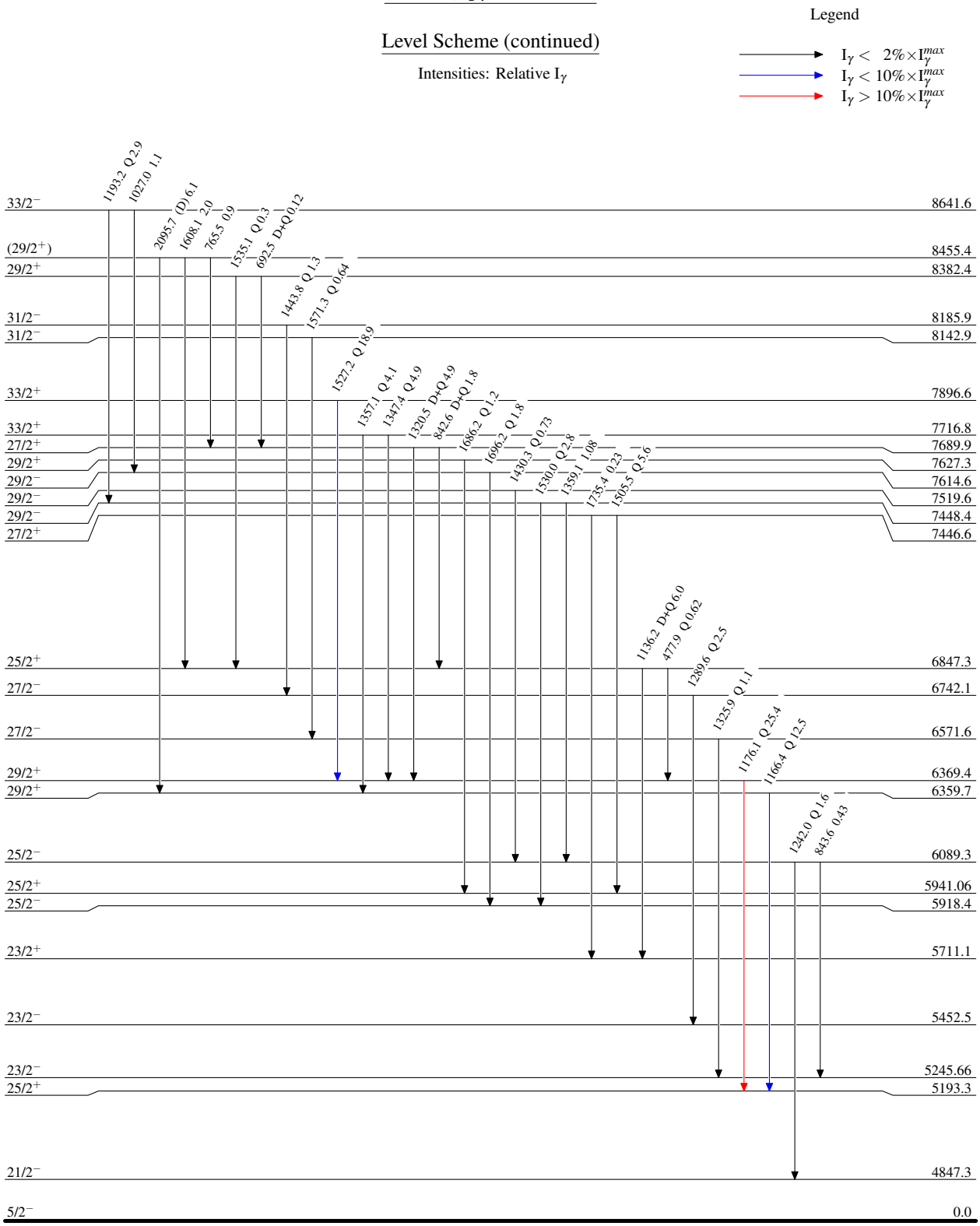


$^{69}_{33}As_{36}$

$^{40}Ca(^{32}S,3p\gamma)$ **2004St23**

Level Scheme (continued)

Intensities: Relative I_γ



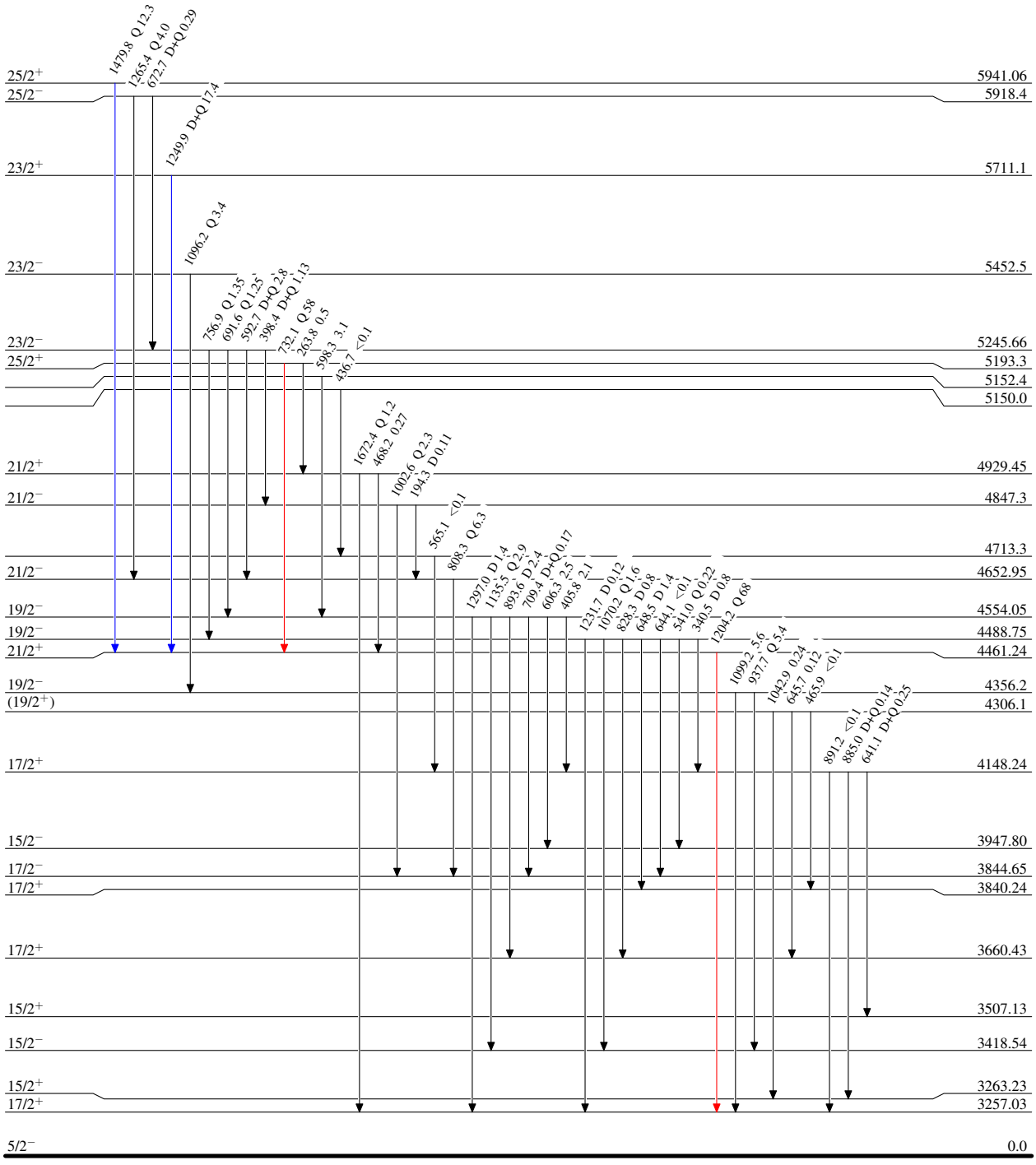
$^{69}_{33}As_{36}$

$^{40}Ca(^{32}S,3p\gamma)$ **2004St23**

Level Scheme (continued)

Intensities: Relative I_γ

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

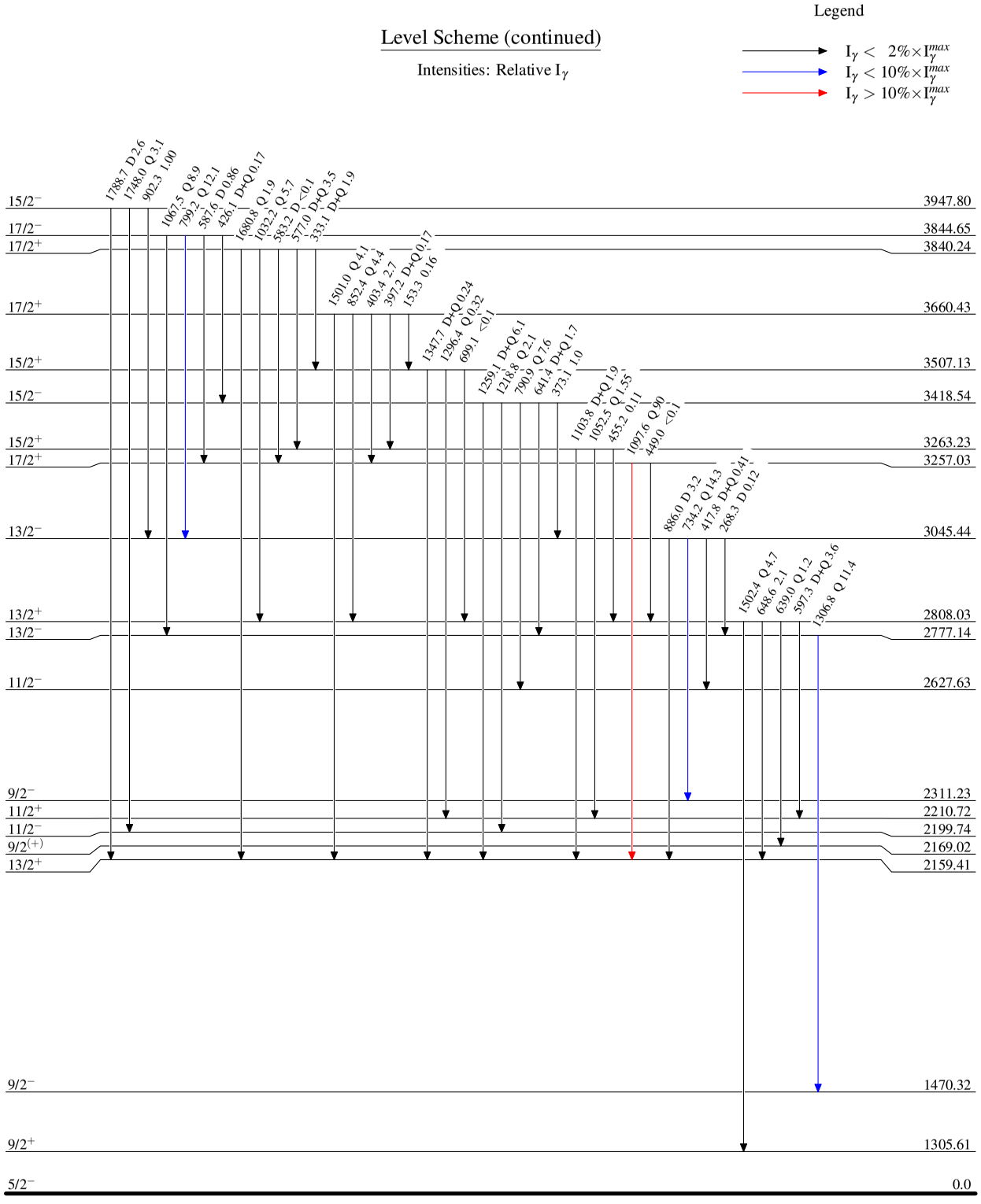


$^{69}_{33}As_{36}$

^{40}Ca(^{32}S,3pγ) 2004St23

Level Scheme (continued)

Intensities: Relative I_γ

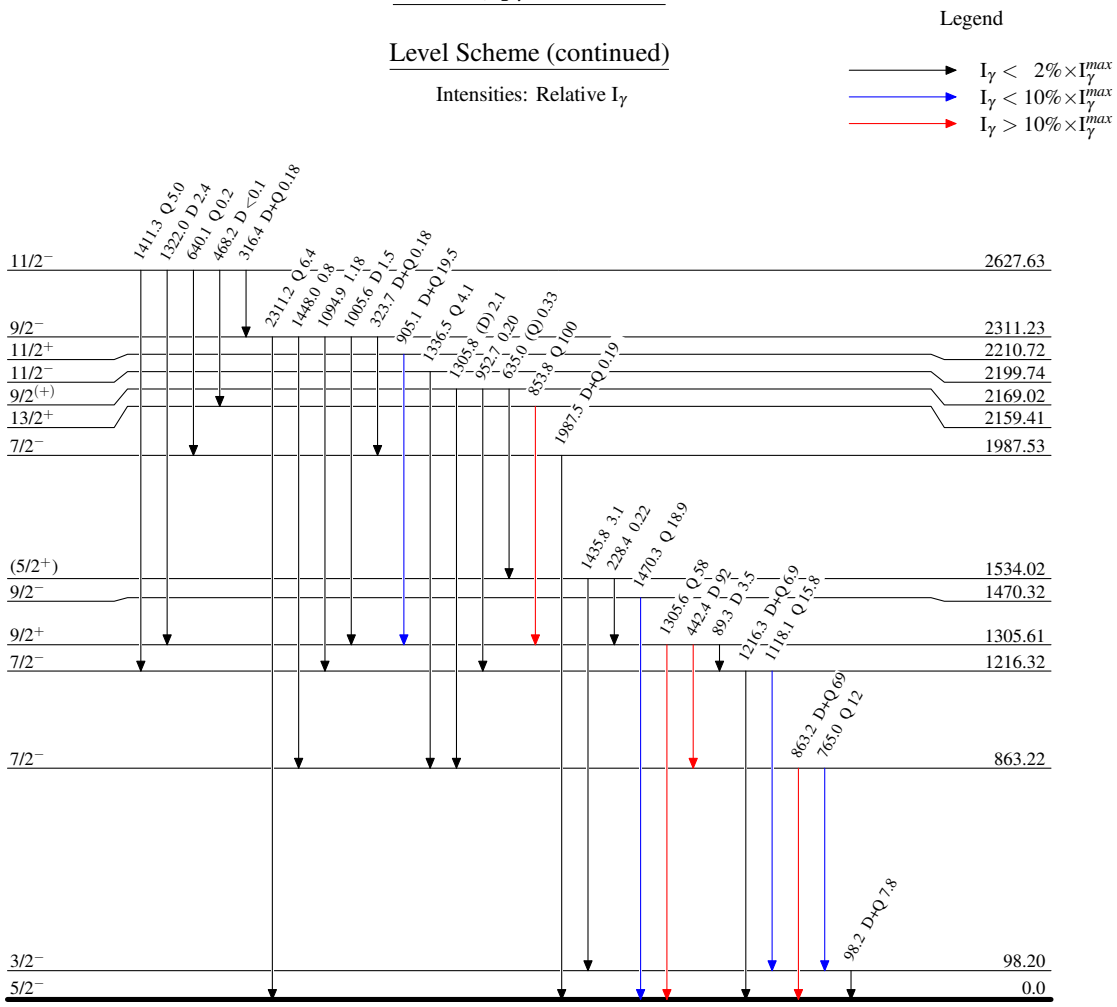


$^{69}_{33}As_{36}$

$^{40}Ca(^{32}S,3p\gamma)$ 2004St23

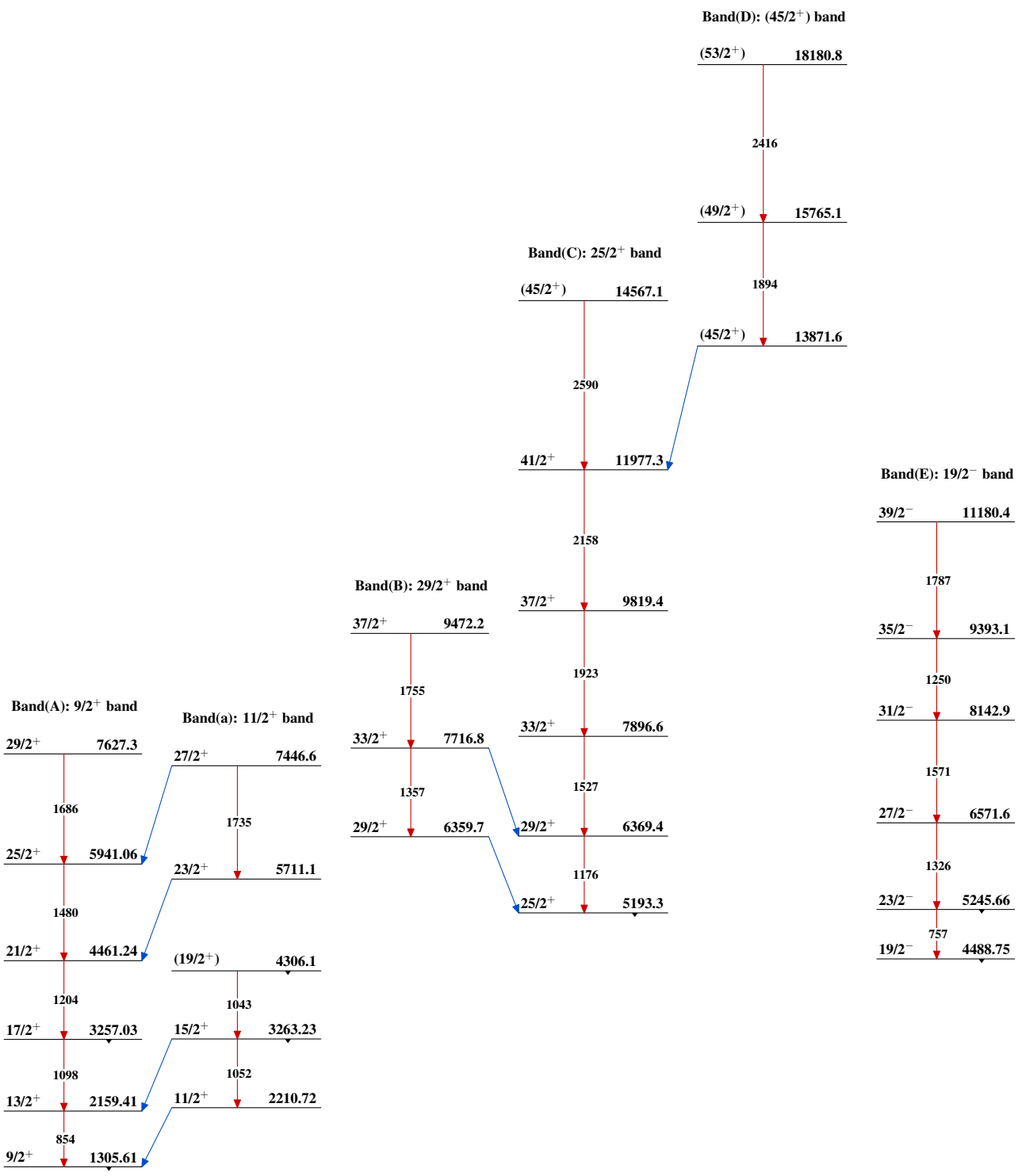
Level Scheme (continued)

Intensities: Relative I_γ



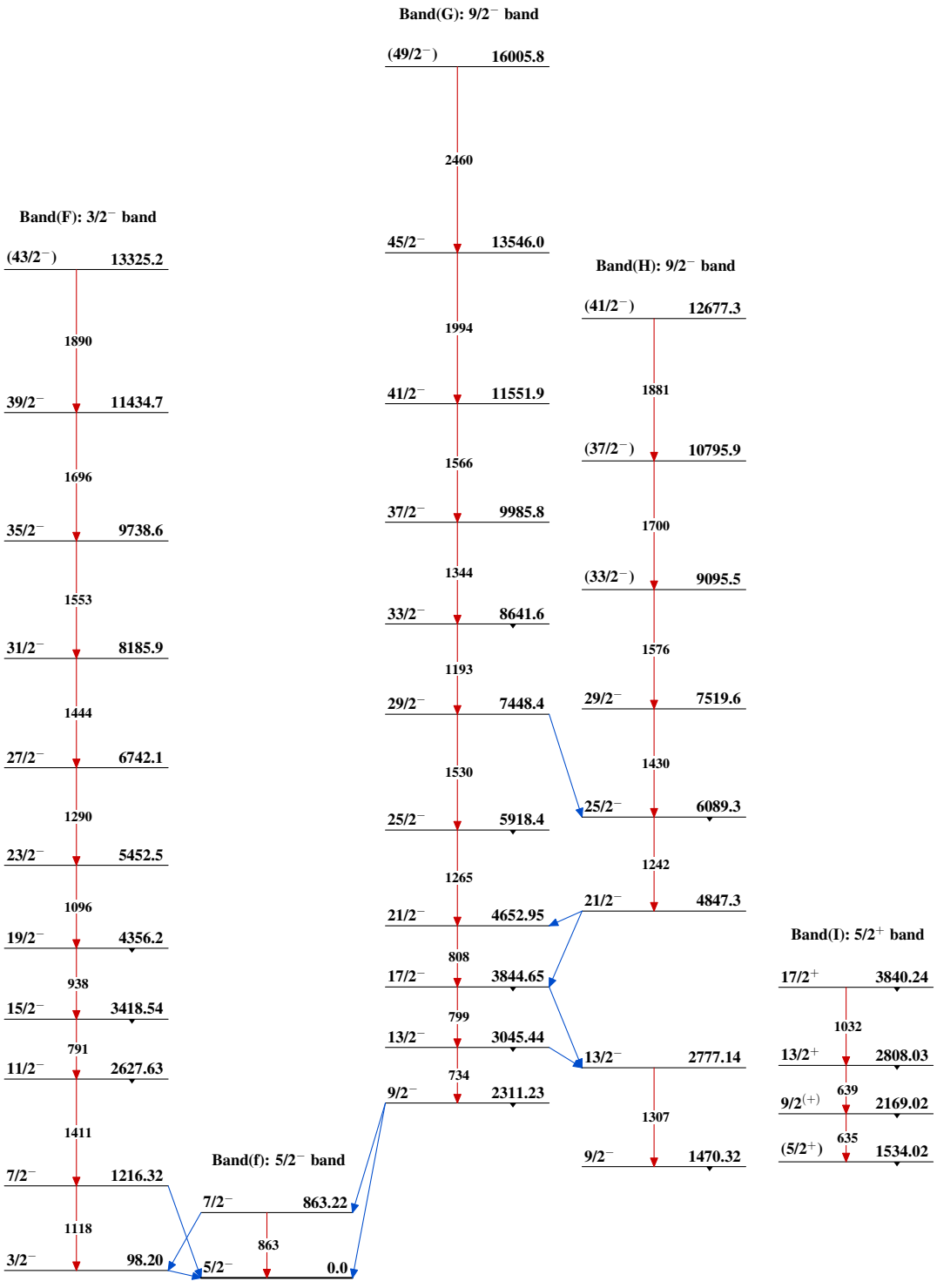
$^{69}_{33}As_{36}$

$^{40}Ca(^{32}S,3p\gamma)$ 2004St23



$^{69}_{33}As_{36}$

$^{40}Ca(^{32}S,3p\gamma)$ 2004St23 (continued)



$^{69}_{33}As_{36}$