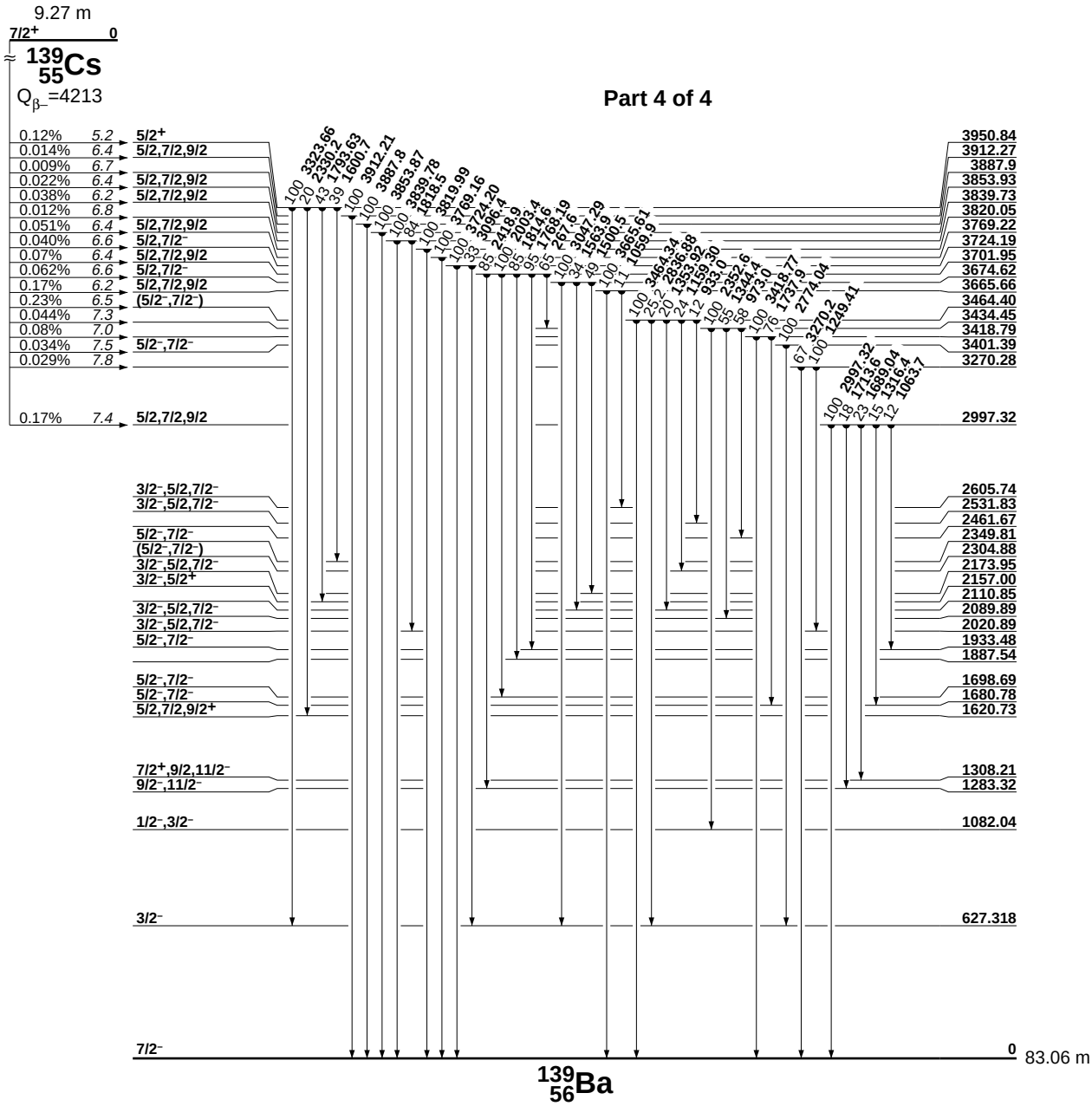

$^{139}_{57}$La (Continued)

H ^{139}La(n,n'γ), (n,n') (68Da14, 69Ma05, 69Ro13, 69Va03, 78AhZX, 82BeYL, 87Ab17)

I ^{139}La(d,d'), (α,α') (71Gr46, 72Ba02)

J Coulomb excitation (65Al21, 71Gr46, 79Ku18, 81Pe04)

K ^{140}Ce(μ$^-$,nγ) E=0 MeV (73Lu01)

L ^{140}Ce(d,^{3}He) E=28.9 MeV (71Jo16, 71Wi04)

Levels and γ-ray branchings:

0, 7/2$^+$, stable, *[ABDEFGHIJKL]*, μ=+2.7830455 *9*, Q=+0.20 *1*

165.864 *6*, 5/2$^+$, 1.499 *19* ns, *[ABDEGHIJKL]* γ_0***165.864*** *6* (†$_\gamma$100) M1

1209.0 *3*, 1/2$^+$, *[ADEHIL]* γ_{166}***1043.1*** *3* (†$_\gamma$100)

1218.96 *17*, 9/2$^+$, 0.57 *5* ps, *[AGHIJK]* γ_{166}***1052.8*** *9* (†$_\gamma$11.1 *11*) E2 γ_0***1219.14*** *18* (†$_\gamma$100.0 *11*) E2+M1: δ=−4.9 *4*

1256.83 *10*, (5/2)$^+$, *[AGHIJK]* γ_{166}***1090.97*** *10* (†$_\gamma$100.0 *17*) E2+M1 γ_0***1256.7*** *5* (†$_\gamma$72.4 *17*) E2+M1

1381.30 *9*, (9/2$^+$), *[AGHK]* γ_{166}***1215.49*** *10* (†$_\gamma$100 *11*) γ_0***1381.1*** *2* (†$_\gamma$4.8 *5*)

1420 *12*, (11/2)$^-$, *[DEGL]*

1420.54 *15*, 5/2$^+$,7/2$^+$, *[AGHIJ]* γ_{166}***1254.7*** *2* (†$_\gamma$10.0 *10*) γ_0***1420.5*** *2* (†$_\gamma$100 *10*) E2+M1

1476.3 *3*, (9/2$^+$), *[AGH]* γ_{166}***1310.6*** *2* (†$_\gamma$100 *5*) γ_0***1476.3*** *3* (†$_\gamma$10.00 *16*)

1537.70 *10*, (11/2$^+$), *[FHI]* γ_0***1537.69*** *10* (†$_\gamma$100)

1537.87 *16*, 7/2$^+$, 0.024 *4* ps, *[AFGHIJ]* γ_{166}***1370.5*** *2* (†$_\gamma$100 *4*) E2+M1: δ=−0.81 *25* γ_0***1537.3*** *10* (†$_\gamma$100 *4*) E2+M1: δ=−0.89 *9*

1558.39 *15*, 3/2$^+$,5/2$^+$, *[ADEHL]* γ_{166}***1392.4*** *2* (†$_\gamma$74 *7*) γ_0***1558.5*** *2* (†$_\gamma$100 *10*)

1576.5 *22*, 9/2, *[GI]* γ_0***1572*** *9* (†$_\gamma$100)

1578.04 *10*, 5/2$^+$,7/2$^+$, *[AHIJ]* γ_0***1578.09*** *10* (†$_\gamma$100) M1+E2

1683.4 *3*, 7/2$^+$, *[AGHIJ]* γ_{166}***1518*** *1* (?) (†$_\gamma$<2) γ_0***1683.1*** *3* (†$_\gamma$100 *1*) M1+E2

1716.12 *10*, 5/2$^+$, *[GHIJ]* γ_{1420}***291.3*** *2* (?) (†$_\gamma$<56) γ_0***1716.11*** *10* (†$_\gamma$100) M1+E2

1761.2 *3*, *[AGH]* γ_{166}***1595.3*** *3* (†$_\gamma$100 *8*) γ_0***1762*** *1* (†$_\gamma$3.8 *13*)

1766.25 *21*, 3/2$^+$,5/2$^+$, *[ADEGHI]* γ_{1476}***291.3*** *2* (?) (†$_\gamma$<79) γ_{166}***1600.9*** *6* (†$_\gamma$76 *16*) γ_0***1765.4*** *4* (†$_\gamma$100 *38*) (E2)

1780 *15*, 1/2$^+$, *[DEI]*

1820 *4*, *[GI]*

1837 *4*, *[GI]*

1856.3 *3*, 3/2$^+$,5/2$^+$, *[ADEGHI]* γ_{166}***1690.5*** *3* (†$_\gamma$100)

1893 *6*, *[GH]* γ_0***1894.0*** *5* (?) (†$_\gamma$100)

1920.74 *18*, (7/2$^+$), *[AGHI]* γ_{166}***1755.0*** *4* (†$_\gamma$83 *10*) γ_0***1920.7*** *2* (†$_\gamma$100 *12*)

1940.89 *16*, (7/2$^+$), *[HI]* γ_{1766}***174.6*** *2* (†$_\gamma$100) γ_{1577}***363.1*** *2* (†$_\gamma$69) $\gamma_{1537.7}$***403.8*** *2* (†$_\gamma$87)

1962.9 *4*, (5/2)$^+$, *[ADEGHIL]* γ_{166}***1797.1*** *4* (†$_\gamma$100)

2035, *[HI]*