Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, G. C. Sheu	ENSDF	20-June-2019

S(n)=22420 *50*; S(p)=2741 *11*; Q(α)=−8934 *21* 2017Wa10

The β^+ decay of ^{20}Mg populates ^{20}Na*(984) for 69.7 % *12* of the decays (1995Pi03). The remaining 30.3% of decays populate ^{20}Na levels that proton decay to states in ^{19}Ne.

The A=20 T=2 mass multiplet is analyzed via the IMME in (1974Ce05, 1974Ro17, 1976Mi01, 1976Tr03, 1979Mo02, 1981Ay01, 1984An18, 2007Ga38, 2012Fo13, 2014Ga20).

For theoretical analysis of the level properties see:

Shell Model: 1980Wi18, 1987Po01, 1990Br26, 1997Ot01, 1999Si13, 2012Po15, 2014To04, 2014Yu02, 2015La10, 2016Ba59. 2017Dr03;

Hartree-Fock-Bogoliubov: 1996Gr21, 1997Te19, 2000St04, 2001La06, 2008Sc02, 2012Li11, 2014Ga13;

Cluster model: 1996Ch04, 1998De43, 1999Sh32, 2002Gu10, 2005Ma98, 2006Ma17, 2007Ma54;

Mean Field: 1996Re03, 1996Re10, 1997Ot01, 1997Pa38, 1998La02, 2003Bh06, 2003Jh01, 2005Ch71, 2006Sa29, 2008Sc02, 2011Ro50;

Other: 1978Gu10, 1984Ha14, 2001Pi11, 2002Mi14, 2002Ro32, 2002Sc48, 2006Zh19, 2007Wa30, 2010Zh45, 2011Eb04, 2011Gu03, 2011Ya01, 2013Bh09, 2013Eb02, 2013Ho01, 2013Sc14, 2015Si12, 2015Wu07, 2016Fo20, 2016Ja03, 2016Ro17, 2018Fo04.

^{20}Mg Levels

Cross Reference (XREF) Flags

A	^{2}H(^{20}Mg,D)	F	^{12}C(^{20}Mg,^{20}Mg)	K	Ni(^{20}Ne,^{20}Mg)
B	^{3}He(^{20}Ne,^{20}Mg)	G	^{20}Ne(^{3}He,3n)	L	Ni(^{24}Mg,^{20}Mg)
C	^{9}Be(^{22}Mg,^{20}Mgγ)	H	^{24}Mg(α,^{8}He)	M	Ni(^{36}Ar,^{20}Mg)
D	^{9}Be(^{24}Mg,^{20}Mg)	I	^{27}Al(^{20}Ne,^{20}Mg)	N	^{208}Pb(^{20}Mg,^{20}Mg′)
E	^{9}Be(^{28}Si,^{20}Mg)	J	Si(P,^{20}Mg)		

E(level)	Jπ	$T_{1/2}$	XREF	Comments
0	0$^+$	90.4 ms *7*	ABCDEFGHIJKLMN	%β^+p=30.3 *12* (1995Pi03) $T_{1/2}$: From weighted average of the following values. $T_{1/2}$=85 ms *15* (1964Fl03) from Ni(^{20}Mg,^{20}Mg), $T_{1/2}$=95 ms *+80−50* (1979Mo02,1981Ay01) from ^{20}Ne(^{3}He,3n), $T_{1/2}$=82 ms *4* (1992Go10) from Ni(^{36}Ar,^{20}Mg), $T_{1/2}$=114 ms *17* (1992Ku24) from ^{9}Be(^{24}Mg,^{20}Mg), $T_{1/2}$=95 ms *3* (1995Pi03) from Ni(^{24}Mg,^{20}Mg), $T_{1/2}$=91.4 ms *10* (2016Lu13) from Si(p,^{20}Mg), and. $T_{1/2}$=90.0 ms *6* (2017Su05) from ^{9}Be(^{28}Si,^{20}Mg). $T_{1/2}$: The results of 1964Fl03, 1979Mo02 and 1992Ku24 are found to have little impact on the average.
1598 *10*	2$^+$		A C N	T=2 Jπ: From ^{20}Mg angular distribution in ^{208}Pb(^{20}Mg,^{20}Mg′).
3.70×10^3 *20*	(2$^+$,4$^+$)	0.47 MeV *6*	A	E(level): From $E_x=3.70^{+2}_{-20}$ MeV. Jπ: From Shell Model expectations of $J^\pi=4^+_1$ and 2^+_2 states in this region.
5.37×10^3 *2*			A	

Adopted Levels, Gammas (continued)

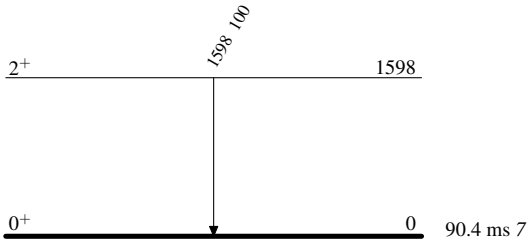
$\gamma(^{20}Mg)$

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
1598	2^+	1598 *10*	100	0	0^+

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{20}_{12}Mg_8$