Table 20.37 from (1998TI06): Isospin triplet components $(T = 1)$ in $A = 20$ nuclei [a]

^{20}F		^{20}Ne			^{20}Na		
E_x (MeV)	J^π	E_x (MeV)	$J^\pi; T$	ΔE_x (MeV) [b]	E_x (MeV)	J^π	ΔE_x (MeV) [c]
0	2^+	10.273	$2^+;1$	—	0	2+	—
0.656	3^+	10.884	$3^+;1$	-0.045	0.596	3^+	-0.060
0.823	4^+	11.090	$4^+;1$	-0.006	0.802	4^+	-0.021
0.984	1^-	11.270	$1^-;1$	0.013			
1.057	1^+	11.262	$1^+;1$	-0.068	0.984	1^+	-0.073
1.309	2^-	11.601	$2^-;1$	0.019	1.346	2^-	0.037
1.824	5^+						
1.844	2^-	12.098	$2^-;1$	-0.019	1.837	2^-	-0.007
1.971	(3^-)	12.256	$3^-;1$	0.012	1.992	3^-	0.021
2.044	2^+	12.221	$2^+;1$	-0.096			
2.194	3^+				2.057	3^+	-0.137
2.865	(3^-)						
					2.645	$(3^+, 1^+)$ [d]	
2.966	3^+				2.849	3^+	-0.117
2.968	(4^-)						
3.172	$(0^-,1^+)$						
3.488	1^+	13.484	$1^+;1$	-0.278	3.001	1^+	-0.487
3.526	(0^+)	13.642	$0^+;1$	-0.157	3.086	0^+	-0.440
3.587	(2)	13.881	$2^+;1$	0.021			

[a] As taken from Tables 20.5, 20.17, 20.33.
[b] Defined as $E_x(^{20}\text{Ne}) - E_x(^{20}\text{F}) - 10.273$.
[c] Defined as $E_x(^{20}\text{Na}) - E_x(^{20}\text{F})$.
[d] The 2.645-MeV state in ^{20}Na is of astrophysical interest and has been associated with the 3^+ level in ^{20}F at 2.966 MeV (1993BR12). The justification for this correspondence is based on the similar cross sections and angular distributions observed in (^{3}He, t)/(t, ^{3}He studies (1993CL09) and on the expected large s-wave Coulomb shift. However, the ^{19}Ne(p, γ) resonance strength that follows from this assignment is larger than the observed upper limit. More recently, the ^{20}Na level at 2.849 MeV has been assigned $J^\pi = 3^+$ (1995PI03). If this state is in fact the analog to the 2.966-MeV state in ^{20}F, then the 2.645-MeV state would have to be linked with one of the ^{20}F states at 2.865 (3^-), 2.968 (4^-), or 3.172 $(0^-,\ 1^+)$ MeV (B.A. Brown, private communication, September 1997). In view of the astrophysical significance of the 2.645-MeV state, further study is warranted.