^{15}N(p,α) 1952Sc28,1970Co09,1973Mc01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, J. E. Purcell and C. G. Sheu	NP A968,71 (2017)	1-Jan-2017

1952Sc28: ^{15}N(p,α) E=98 keV-1.5 MeV; measured products, ^{12}C, ^{4}He, E_γ, I_γ; deduced σ, σ(E), resonance parameters.
1968Go07: ^{15}N(P,α_1) E=0.4-1.9 MeV, measured $\sigma(E,E_\gamma)$, γ-γ-coin, $\sigma(E,E_\alpha)$.
1969Cl07: ^{15}N(p,$\alpha\gamma$) E=898-1640 keV, measured $\sigma(E,E_\gamma,\theta(\alpha\gamma))$.
1970Co09: ^{15}N(p,$\alpha\gamma$) E=0.898,1.640 MeV, measured Doppler shifts. ^{12}C levels deduced $T_{1/2}$.
1971Gu23: ^{15}N(P,α) E=19-45 MeV, measured $\sigma(E,\theta)$.
1972Ma21: ^{15}N(P,α) E=54,43.7,50.5 MeV, measured $\sigma(E_\alpha,\theta)$. ^{12}C levels deduced L.
1973Mc01: ^{15}N(p,α) E ≈ threshold, measured Q, $\sigma(E_{\alpha 2})$. ^{12}C deduced level.
1974Ro37: ^{15}N(p,$\alpha\gamma$) E=150-2500 keV, measured $\sigma(E,E_\gamma,\theta)$.
1976Pe03: ^{15}N(pol. p,α) E=0.34-1.21 MeV, measured analyzing power A(θ).
1977Br32: ^{15}N(P,α_0),^{15}N(p,$\alpha\gamma$) E=0.9-1.25 MeV, measured $\sigma(E_P,\theta)$, Doppler profiles.
1977Ja11: ^{15}N(P,α) E=2.50-5.14 MeV, measured $\sigma(E,E_\alpha,\theta)$.
1978Fr04: ^{15}N(P,α) E=2.88-3.64 MeV, measured $\sigma(E,\theta)$.
1978Oc01: ^{15}N(p,$\alpha\gamma$) E=8.6-18.0 MeV, measured yield.
1979Zy02: ^{15}N(P,α_0) E=93-418 keV, measured $\sigma(E,\theta)$. Deduced astrophysical S-factor.
1982Re06: ^{15}N(P,α) E=78-810 keV, measured $\sigma(E,\theta)$. Deduced astrophysical S-factor.
1983Le25,1982LeZU: ^{15}N(P,α) E=0.43,0.9 MeV, measured $\sigma(E,E_\alpha,\theta)$, $\sigma(E,E_P,\theta)$.
1983Sn03: ^{15}N(p,$\alpha\gamma$),(pol. p,$\alpha\gamma$) E=2.5-9.5 MeV, measured capture $\sigma(E_\gamma)$, $\sigma(\theta\gamma)$, E_γ, I_γ, analyzing power vs θ.
1985Ki07: ^{15}N(p,$\alpha\gamma$) E=2.4-4.2 MeV, measured thick target relative γ yields, E_γ, I_γ.
1987Os01: ^{15}N(p,$\alpha\gamma$) E≈430 keV, measured γ yield.
1988Ha04: ^{15}N(P,α) E=20-100 MeV, measured E_γ, I_γ, $\sigma(\theta)$, analyzing power vs θ. ^{12}C deduced GDR, parameters, EWSR.
1988Pi12: ^{15}N(p,$\alpha\gamma$) E=1.1-2.7 MeV, measured γ-spectra, σ(E). Deduced γ yields.
1998Ad12: ^{15}N(P,α) E=low, compiled, analyzed S-factor data, calculations.
2000Ig05: ^{15}N(P,α) E=3.5-7.5 MeV, measured E_α, E_γ, α-γ-coin, $\sigma(\theta)$ for ground and first 2^+ states. Deduced spin-tensor component of density matrix, population of magnetic sublevels.
2006Ab20: ^{15}N(P,α) E=9.09-43.7 MeV, analyzed $\sigma(\theta)$.
2010Ma26: ^{15}N(P,α)^{12}C E=430, 897 keV, measured γ-ray spectra, yield, angular distributions, branching ratio, and resonance strengths.
2011Ma09: ^{15}N(P,$\alpha\gamma$) E<2.5 MeV, measured E_γ, I_γ. Deduced S-factors, proton resonances. R-matrix fits.

^{12}C Levels

E(level)[†]	J^π	$T_{1/2}$	L[‡]	Comments
0				
4432 *10*	2^+	45 fs *6*	1	E(level): From E_α (1952Sc28). $T_{1/2}$: From τ_m=65 fs *9* (1970Co09).
7654.2 *16*			1	E(level): From (1973Mc01).
14.08×10^3	4^+		3	
16.1×10^3	2^+		3	
17.76×10^3			1	

[†] See for example (2006Ab20).
[‡] From (1972Ma21).

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$\gamma(^{12}C)$

E_γ	E_i(level)	J_i^π	E_f	Comments
4443 *20*	4432	2^+	0	E_γ: From E_γ (1952Sc28).

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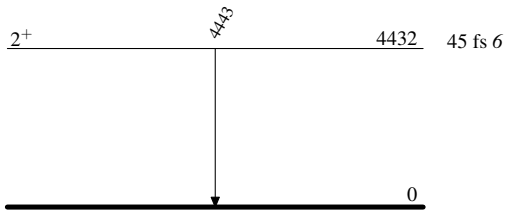
Level Scheme



$^{12}_{6}C_{6}$