$\eta(2370)$

$I^G(J^{PC}) = 0^+(0^{-+})$

OMITTED FROM SUMMARY TABLE
was $X(2370)$
$J^{PC} = 0^{-+}$ determined by ABLIKIM 24.

$\eta(2370)$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
2377 ± 9 OUR AVERAGE					
2395 ±11 $^{+26}_{-94}$		[1] ABLIKIM	24	BES3	$J/\psi \to \gamma K^0_S K^0_S \eta'$
2376.3± 8.7$^{+\ 3.2}_{-\ 4.3}$	565	ABLIKIM	11C	BES3	$J/\psi \to \gamma \pi^+ \pi^- \eta'$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2341.6± 6.5± 5.7		[2] ABLIKIM	20Q	BES3	$J/\psi \to \gamma K \overline{K} \eta'$

[1] Decaying to $f_0(980)\eta'$, fitted together with $X(1835)$, a 600 MeV broad structure around 2.8 GeV, and the tail of the $\eta_c(1S)$. Supersedes ABLIKIM 20Q.

[2] The state observed by ABLIKIM 11C at 2120 MeV is not observed with 90% CL upper limit of 1.49×10^{-5} for $J/\psi \to \gamma X(2120) \to \gamma K^+ K^- \eta'$ and 6.38×10^{-6} for $K^0_S K^0_S \eta'$.

$\eta(2370)$ WIDTH

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
148^{+80}_{-28} OUR AVERAGE Error includes scale factor of 1.7.				
$188^{+18}_{-17}{}^{+124}_{-\ 33}$	[1] ABLIKIM	24	BES3	$J/\psi \to \gamma K^0_S K^0_S \eta'$
83±17$^{+\ 44}_{-\ \ 6}$	ABLIKIM	11C	BES3	$J/\psi \to \gamma \pi^+ \pi^- \eta'$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
117±10± 8	[2] ABLIKIM	20Q	BES3	$J/\psi \to \gamma K \overline{K} \eta'$

[1] Decaying to $f_0(980)\eta'$, fitted together with $X(1835)$, a 600 MeV broad structure around 2.8 GeV, and the tail of the $\eta_c(1S)$. Supersedes ABLIKIM 20Q.

[2] The state observed by ABLIKIM 11C at 2120 MeV is not observed with 90% CL upper limit of 1.49×10^{-5} for $J/\psi \to \gamma X(2120) \to \gamma K^+ K^- \eta'$ and 6.38×10^{-6} for $K^0_S K^0_S \eta'$.

$\eta(2370)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$K^+ K^- \eta'$	seen
Γ_2	$K^0_S K^0_S \eta'$	seen
Γ_3	$\pi^+ \pi^- \eta'$	seen
Γ_4	$f_0(980)\eta'$	seen
Γ_5	$\eta\eta\eta'$	not seen

$\eta(2370)$ BRANCHING RATIOS

$\Gamma(K^+K^-\eta')/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	ABLIKIM	20Q	BES3	$J/\psi \to \gamma K^+K^-\eta'$

$\Gamma(K^0_S K^0_S \eta')/\Gamma_{\text{total}}$ Γ_2/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	ABLIKIM	20Q	BES3	$J/\psi \to \gamma K^0_S K^0_S \eta'$

$\Gamma(\pi^+\pi^-\eta')/\Gamma_{\text{total}}$ Γ_3/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	ABLIKIM	11C	BES3	$J/\psi \to \gamma\pi^+\pi^-\eta'$

$\Gamma(f_0(980)\eta')/\Gamma_{\text{total}}$ Γ_4/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	ABLIKIM	24	BES3	$J/\psi \to \gamma K^0_S K^0_S \eta'$

$\Gamma(\eta\eta\eta')/\Gamma_{\text{total}}$ Γ_5/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[1] ABLIKIM	21C	BES3	$J/\psi(1S) \to \gamma\eta\eta\eta'$

[1] ABLIKIM 21C measured $B(J/\psi(1S) \to \gamma\eta(2370) \to \gamma\eta\eta\eta') < 9.2 \times 10^{-6}$.

$\eta(2370)$ REFERENCES

ABLIKIM	24	PRL 132 181901	M. Ablikim *et al.*	(BESIII Collab.) JPC
ABLIKIM	21C	PR D103 012009	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	20Q	EPJ C80 746	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	11C	PRL 106 072002	M. Ablikim *et al.*	(BESIII Collab.)