

X(3915)

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

OMITTED FROM SUMMARY TABLE

Observed in $\omega J/\psi$, thus $C = +$. May be the same state as $\chi_{c2}(2P)$.

X(3915) MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
3917.4 ± 2.7 OUR AVERAGE				
3919.1 ⁺ _− 3.8 ⁺ _− 3.5 ± 2.0		DEL-AMO-SA0B	BABR	$B \rightarrow \omega J/\psi K$
3915 ± 3 ± 2	49 ± 15	¹ UEHARA	10 BELL	10.6 $e^+ e^- \rightarrow e^+ e^- \omega J/\psi$
3943 ± 11 ± 13	58 ± 11	² CHOI	05 BELL	$B \rightarrow \omega J/\psi K$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
3914.6 ⁺ _− 3.8 ⁺ _− 3.4 ± 2.0		² AUBERT	08W BABR	Superseded by DEL-AMO-SANCHEZ 10B

¹ May be $\chi_{c2}(2P)$.

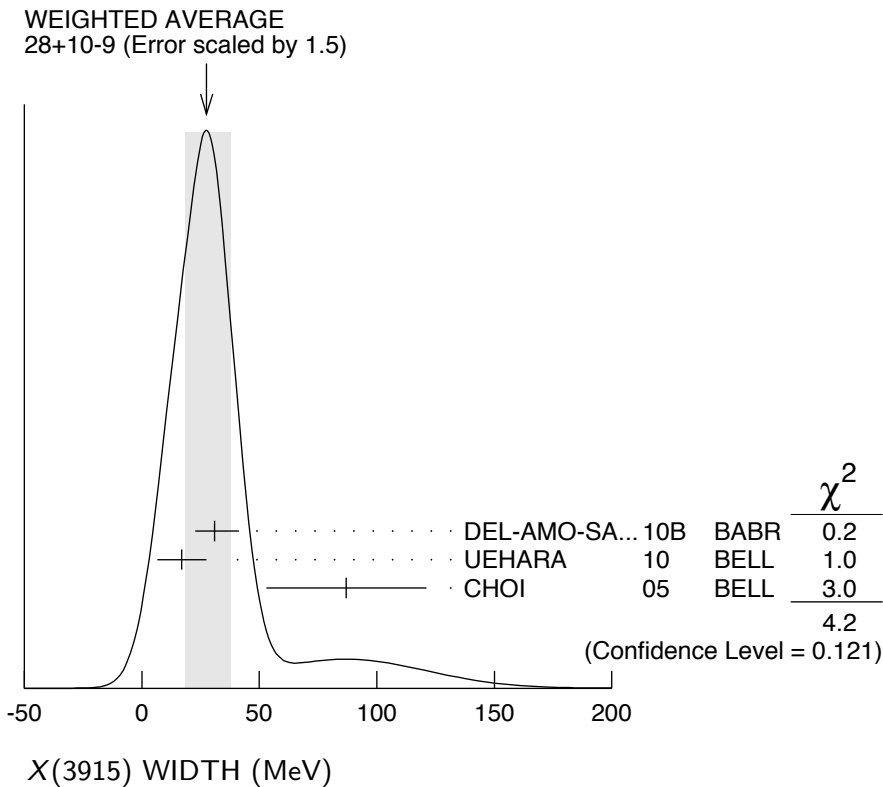
² $\omega J/\psi$ threshold enhancement fitted as an S-wave Breit-Wigner resonance.

X(3915) WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
28⁺_− 10₉ OUR AVERAGE Error includes scale factor of 1.5. See the ideogram below.				
31 ⁺ _− 10 ₈ ± 2.0		DEL-AMO-SA...10B	BABR	$B \rightarrow \omega J/\psi K$
17 ± 10 ± 3	49 ± 15	³ UEHARA	10 BELL	10.6 $e^+ e^- \rightarrow e^+ e^- \omega J/\psi$
87 ± 22 ± 26	58 ± 11	⁴ CHOI	05 BELL	$B \rightarrow \omega J/\psi K$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
34 ⁺ _− 12 ₈ ± 5		⁴ AUBERT	08W BABR	Superseded by DEL-AMO-SANCHEZ 10B

³ May be $\chi_{c2}(2P)$.

⁴ $\omega J/\psi$ threshold enhancement fitted as an S-wave Breit-Wigner resonance.



X(3915) DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $\omega J/\psi$	seen
Γ_2 $\bar{D}^*0 D^0$	
Γ_3 $\gamma\gamma$	seen

X(3915) $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$$\frac{\Gamma(\omega J/\psi) \times \Gamma(\gamma\gamma)}{\Gamma_{\text{total}}} \qquad \Gamma_1\Gamma_3/\Gamma$$

VALUE (eV)	EVTS	DOCUMENT ID	TECN	COMMENT
$18 \pm 5 \pm 2$	49 ± 15	^{5,6} UEHARA 10	BELL	$10.6 e^+ e^- \rightarrow e^+ e^- \omega J/\psi$
$61 \pm 17 \pm 8$	49 ± 15	^{5,7} UEHARA 10	BELL	$10.6 e^+ e^- \rightarrow e^+ e^- \omega J/\psi$

• • • We do not use the following data for averages, fits, limits, etc. • • •

⁵ May be $\chi_{c2}(2P)$.

⁶ For $J^P = 2^+$, helicity-2.

⁷ For $J^P = 0^+$.

X(3915) BRANCHING RATIOS

$$\frac{\Gamma(\gamma\gamma)}{\Gamma_{\text{total}}} \qquad \Gamma_3/\Gamma$$

VALUE	DOCUMENT ID	TECN	COMMENT
seen	⁸ UEHARA 10	BELL	$10.6 e^+ e^- \rightarrow e^+ e^- \omega J/\psi$

⁸ May be $\chi_{c2}(2P)$.

$\Gamma(\omega J/\psi)/\Gamma(\bar{D}^{*0} D^0)$					Γ_1/Γ_2
VALUE	CL%	DOCUMENT ID	TECN	COMMENT	
>0.71	90	⁹ AUSHEV	10	BELL	$B \rightarrow \bar{D}^{*0} D^0 K$

⁹ By combining the upper limit $B(B \rightarrow X(3915) K) \times B(X(3915) \rightarrow D^{*0} \bar{D}^0) < 0.67 \times 10^{-4}$ from AUSHEV 10 with the average of CHOI 05 and AUBERT 08W measurements $B(B \rightarrow X(3915) K) \times B(X(3915) \rightarrow \omega J/\psi) = (0.51 \pm 0.11) \times 10^{-4}$.

$\Gamma(\omega J/\psi)/\Gamma_{\text{total}}$					Γ_1/Γ
VALUE		DOCUMENT ID	TECN	COMMENT	
seen		¹⁰ DEL-AMO-SA...10B	BABR	$B \rightarrow \omega J/\psi K$	
seen		¹¹ CHOI	05	BELL	$B \rightarrow \omega J/\psi K$

¹⁰ DEL-AMO-SANCHEZ 10B reports $B(B^\pm \rightarrow X(3915) K^\pm) \times B(X(3915) \rightarrow J/\psi \omega) = (3.0^{+0.7+0.5}_{-0.6-0.3}) \times 10^{-5}$ and $B(B^0 \rightarrow X(3915) K^0) \times B(X(3915) \rightarrow J/\psi \omega) = (2.1 \pm 0.9 \pm 0.3) \times 10^{-5}$.

¹¹ CHOI 05 reports $B(B \rightarrow X(3915) K) \times B(X(3915) \rightarrow J/\psi \omega) = (7.1 \pm 1.3 \pm 3.1) \times 10^{-5}$.

X(3915) REFERENCES

AUSHEV	10	PR D81 031103R	T. Aushev <i>et al.</i>	(BELLE Collab.)
DEL-AMO-SA...	10B	PR D82 011101R	P. del Amo Sanchez <i>et al.</i>	(BABAR Collab.)
UEHARA	10	PRL 104 092001	S. Uehara <i>et al.</i>	(BELLE Collab.)
AUBERT	08W	PRL 101 082001	B. Aubert <i>et al.</i>	(BABAR Collab.)
CHOI	05	PRL 94 182002	S.-K. Choi <i>et al.</i>	(BELLE Collab.)