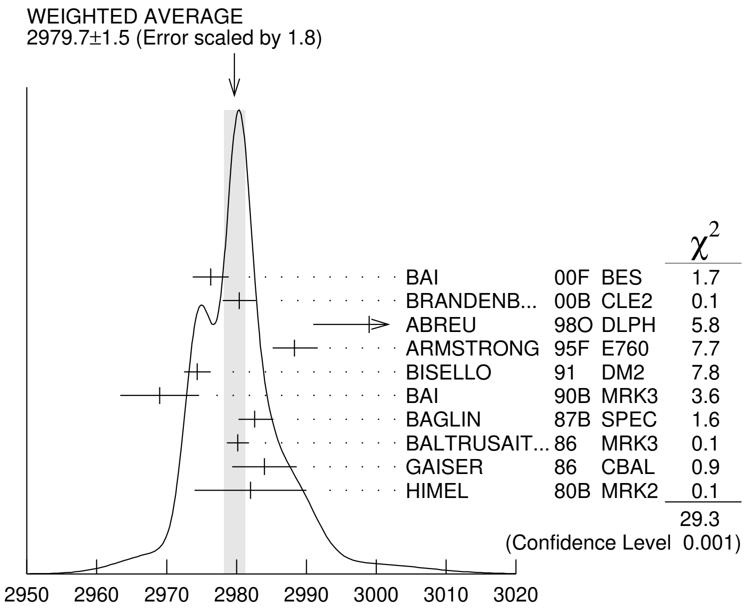
$\eta_c(1S)$

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

$\eta_c(1S)$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
2979.7± 1.5 OUR AVERAGE		Error includes scale factor of 1.8. See the ideogram below.			
2976.3± 2.3± 1.2		[1,2,5] BAI	00F	BES	$J/\psi \to \gamma\eta_c$ and $\psi(2S) \to \gamma\eta_c$
2980.4± 2.3± 0.6		BRANDENB...	00B	CLE2	$\gamma\gamma \to \eta_c \to K^\pm K^0_S \pi^\mp$
2999 ± 8	25	ABREU	98O	DLPH	$e^+e^- \to e^+e^-$ +hadrons
$2988.3^{+3.3}_{-3.1}$		ARMSTRONG	95F	E760	$\overline{p}p \to \gamma\gamma$
2974.4± 1.9		[1] BISELLO	91	DM2	$J/\psi \to \eta_c\gamma$
2969 ± 4 ± 4	80	BAI	90B	MRK3	$J/\psi \to \gamma K^+K^-K^+K^-$
$2982.6^{+2.7}_{-2.3}$	12	BAGLIN	87B	SPEC	$\overline{p}p \to \gamma\gamma$
2980.2± 1.6		[1] BALTRUSAIT...	86	MRK3	$J/\psi \to \eta_c\gamma$
2984 ± 2.3± 4.0		GAISER	86	CBAL	$J/\psi \to \gamma X$, $\psi(2S) \to \gamma X$
2982 ± 8	18	[3] HIMEL	80B	MRK2	e^+e^-
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2976.6± 2.9± 1.3	140	[1,2] BAI	00F	BES	$J/\psi \to \gamma\eta_c$
2975.8± 3.9± 1.2		[1,2] BAI	99B	BES	Sup. by BAI 00F
2956 ±12 ±12		BAI	90B	MRK3	$J/\psi \to \gamma K^+K^-K^0_S K^0_L$
2976 ± 8		[4] BALTRUSAIT...	84	MRK3	$J/\psi \to 2\phi\gamma$
2980 ± 9		[3] PARTRIDGE	80B	CBAL	e^+e^-

[1] Average of several decay modes.
[2] Using an η_c width of 13.2 MeV.
[3] Mass adjusted by us to correspond to $J/\psi(1S)$ mass = 3097 MeV.
[4] $\eta_c \to \phi\phi$.



$\eta_c(1S)$ mass (MeV)

[5] Weighted average of the $\psi(2S)$ and $J/\psi(1S)$ samples.

$\eta_c(1S)$ WIDTH

VALUE (MeV)	*CL%*	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
$16.0^{+3.6}_{-3.2}$ OUR AVERAGE			Error includes scale factor of 1.2.			
$11.0 \pm 8.1 \pm 4.1$			[7] BAI	00F	BES	$J/\psi \to \gamma\eta_c$ and $\psi(2S) \to \gamma\eta_c$
$27.0 \pm 5.8 \pm 1.4$			BRANDENB...	00B	CLE2	$\gamma\gamma \to \eta_c \to K^{\pm} K^0_S \pi^{\mp}$
$23.9^{+12.6}_{-7.1}$			ARMSTRONG	95F	E760	$\overline{p}p \to \gamma\gamma$
$7.0^{+7.5}_{-7.0}$		12	BAGLIN	87B	SPEC	$\overline{p}p \to \gamma\gamma$
$10.1^{+33.0}_{-8.2}$		23	[6] BALTRUSAIT...	86	MRK3	$J/\psi \to \gamma p\overline{p}$
11.5 ± 4.5			GAISER	86	CBAL	$J/\psi \to \gamma X$, $\psi(2S) \to \gamma X$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<40	90	18	HIMEL	80B	MRK2	e^+e^-
<20	90		PARTRIDGE	80B	CBAL	e^+e^-

[6] Positive and negative errors correspond to 90% confidence level.

[7] From a fit to the 4-prong invariant mass in $\psi(2S) \to \gamma\eta_c$ and $J/\psi(1S) \to \gamma\eta_c$ decays.

$\eta_c(1S)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)	Confidence level
	Decays involving hadronic resonances		
Γ_1	$\eta'(958)\pi\pi$	(4.1 ± 1.7) %	
Γ_2	$\rho\rho$	(2.6 ± 0.9) %	
Γ_3	$K^*(892)^0 K^- \pi^+ +$ c.c.	(2.0 ± 0.7) %	
Γ_4	$K^*(892)\overline{K}^*(892)$	$(8.5 \pm 3.1) \times 10^{-3}$	
Γ_5	$\phi\phi$	$(7.1 \pm 2.8) \times 10^{-3}$	
Γ_6	$a_0(980)\pi$	< 2 %	90%
Γ_7	$a_2(1320)\pi$	< 2 %	90%
Γ_8	$K^*(892)\overline{K} +$ c.c.	< 1.28 %	90%
Γ_9	$f_2(1270)\eta$	< 1.1 %	90%
Γ_{10}	$\omega\omega$	$< 3.1 \times 10^{-3}$	90%
	Decays into stable hadrons		
Γ_{11}	$K\overline{K}\pi$	(5.5 ± 1.7) %	
Γ_{12}	$\eta\pi\pi$	(4.9 ± 1.8) %	
Γ_{13}	$\pi^+\pi^- K^+ K^-$	$(2.0 \, ^{+0.7}_{-0.6})$ %	
Γ_{14}	$2(K^+ K^-)$	(2.1 ± 1.2) %	
Γ_{15}	$2(\pi^+\pi^-)$	(1.2 ± 0.4) %	
Γ_{16}	$p\overline{p}$	$(1.2 \pm 0.4) \times 10^{-3}$	
Γ_{17}	$K\overline{K}\eta$	< 3.1 %	90%
Γ_{18}	$\pi^+\pi^- p\overline{p}$	< 1.2 %	90%
Γ_{19}	$\Lambda\overline{\Lambda}$	$< 2 \times 10^{-3}$	90%
	Radiative decays		
Γ_{20}	$\gamma\gamma$	$(3.0 \pm 1.2) \times 10^{-4}$	

$\eta_c(1S)$ PARTIAL WIDTHS

$\Gamma(\gamma\gamma)$ $\quad\Gamma_{20}$

VALUE (keV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
7.5± 0.8 OUR AVERAGE					
7.6± 0.8± 0.4		[8] BRANDENB...	00B	CLE2	$\gamma\gamma \to \eta_c \to K^\pm K^0_S \pi^\mp$
6.9± 1.7± 2.1	76	[9] ACCIARRI	99T	L3	$e^+e^- \to e^+e^-\eta_c$
27 ±16 ±10	5	[8] SHIRAI	98	AMY	58 e^+e^-
$6.7^{+2.4}_{-1.7}\pm 2.3$		[10] ARMSTRONG	95F	E760	$\overline{p}p \to \gamma\gamma$
11.3± 4.2		[11] ALBRECHT	94H	ARG	$e^+e^- \to e^+e^-\eta_c$
$5.9^{+2.1}_{-1.8}\pm 1.9$		[12] CHEN	90B	CLEO	$e^+e^- \to e^+e^-\eta_c$
$6.4^{+5.0}_{-3.4}$		[13] AIHARA	88D	TPC	$e^+e^- \to e^+e^- X$
28 ±15		[8,14] BERGER	86	PLUT	$\gamma\gamma \to K\overline{K}\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
8.0± 2.3± 2.4	17	[15] ADRIANI	93N	L3	$e^+e^- \to e^+e^-\eta_c$

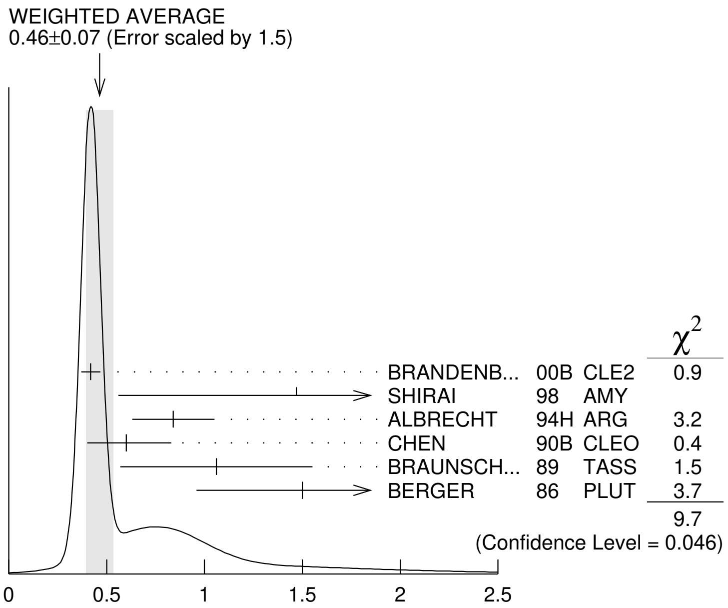
[8] Normalized to B($\eta_c \rightarrow K^{\pm} K^0_S \pi^{\mp}$).
[9] Normalized to the sum of 9 branching ratios.
[10] Normalized to B($\eta_c \rightarrow p\overline{p}$)= $(1.2 \pm 0.4) \times 10^{-3}$.
[11] Normalized to the sum of B($\eta_c \rightarrow K^{\pm} K^0_S \pi^{\mp}$), B($\eta_c \rightarrow \phi\phi$), B($\eta_c \rightarrow K^+ K^- \pi^+ \pi^-$), and B($\eta_c \rightarrow 2\pi^+ 2\pi^-$).
[12] Normalized to the sum of B($\eta_c \rightarrow K^{\pm} K^0_S \pi^{\mp}$), B($\eta_c \rightarrow K^+ K^- \pi^+ \pi^-$), and B($\eta_c \rightarrow 2\pi^+ 2\pi^-$).
[13] Normalized to the sum of B($\eta_c \rightarrow K^{\pm} K^0_S \pi^{\mp}$), B($\eta_c \rightarrow 2K^+ 2K^-$), B($\eta_c \rightarrow K^+ K^- \pi^+ \pi^-$), and B($\eta_c \rightarrow 2\pi^+ 2\pi^-$).
[14] Re-evaluated by AIHARA 88D.
[15] Superseded by ACCIARRI 99T.

$\eta_c(1S)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$\Gamma(K\overline{K}\pi) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ — $\Gamma_{11}\Gamma_{20}/\Gamma$

VALUE (keV)	*CL%*	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.46 ±0.07 OUR AVERAGE Error includes scale factor of 1.5. See the ideogram below.						
0.418±0.044±0.022			[16] BRANDENB...	00B	CLE2	$\gamma\gamma \rightarrow \eta_c \rightarrow K^{\pm} K^0_S \pi^{\mp}$
1.47 ±0.87 ±0.27			[16] SHIRAI	98	AMY	$\gamma\gamma \rightarrow \eta_c \rightarrow K^{\pm} K^0_S \pi^{\mp}$
0.84 ±0.21			[16] ALBRECHT	94H	ARG	$\gamma\gamma \rightarrow K^{\pm} K^0_S \pi^{\mp}$
0.60 $^{+0.23}_{-0.20}$			[16] CHEN	90B	CLEO	$\gamma\gamma \rightarrow \eta_c K^{\pm} K^0_S \pi^{\mp}$
1.06 ±0.41 ±0.27		11	[16] BRAUNSCH...	89	TASS	$\gamma\gamma \rightarrow K\overline{K}\pi$
1.5 $^{+0.60}_{-0.45}$ ±0.3		7	[16] BERGER	86	PLUT	$\gamma\gamma \rightarrow K\overline{K}\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.63	95		[16] BEHREND	89	CELL	$\gamma\gamma \rightarrow K^0_S K^{\pm} \pi^{\mp}$
<4.4	95		ALTHOFF	85B	TASS	$\gamma\gamma \rightarrow K\overline{K}\pi$

[16] $K^{\pm} K^0_S \pi^{\mp}$ corrected to $K\overline{K}\pi$ by factor 3.



$\Gamma\left(K\overline{K}\pi\right) \times \Gamma\left(\gamma\gamma\right)/\Gamma_{\text{total}}$ $\qquad\qquad$ $\Gamma_{11}\Gamma_{20}/\Gamma$

$\eta_c(1S)$ BRANCHING RATIOS

——— HADRONIC DECAYS ———

$\Gamma\left(\eta'(958)\pi\pi\right)/\Gamma_{\text{total}}$ $\qquad$ Γ_1/Γ

VALUE	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
0.041±0.017	14	[17] BALTRUSAIT...86	MRK3	$J/\psi \to \eta_c\gamma$

$\Gamma\left(\rho\rho\right)/\Gamma_{\text{total}}$ $\qquad$ Γ_2/Γ

VALUE (units 10^{-3})	*CL%*	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
26 ± 9 OUR EVALUATION (Treating systematicerrors as correlated.)					
25 ± 8 OUR AVERAGE					
26.0± 2.4±8.8		113	[17] BISELLO 91	DM2	$J/\psi \to \gamma\rho^0\rho^0$
23.6±10.6±8.2		32	[17] BISELLO 91	DM2	$J/\psi \to \gamma\rho^+\rho^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<140	90		[17] BALTRUSAIT...86	MRK3	$J/\psi \to \eta_c\gamma$

$\Gamma\left(K^*(892)^0 K^-\pi^+ + \text{c.c.}\right)/\Gamma_{\text{total}}$ $\qquad$ Γ_3/Γ

VALUE	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
0.02 ±0.007	63	[17] BALTRUSAIT...86	MRK3	$J/\psi \to \eta_c\gamma$

$\Gamma\left(K^*(892)\overline{K}^*(892)\right)/\Gamma_{\text{total}}$ $\qquad$ Γ_4/Γ

VALUE (units 10^{-4})	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
85±31 OUR AVERAGE				
82±28±27	14	[17] BISELLO 91	DM2	$e^+e^- \to \gamma K^+K^-\pi^+\pi^-$
90±50	9	[17] BALTRUSAIT...86	MRK3	$J/\psi \to \eta_c\gamma$

$\Gamma(K^*(892)\overline{K}+$ c.c.$)/\Gamma_{total}$ — Γ_8/Γ

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<0.0128	90	BISELLO	91	DM2	$J/\psi \to \gamma K^0_S K^\pm \pi^\mp$
<0.0132	90	[17] BISELLO	91	DM2	$J/\psi \to \gamma K^+ K^- \pi^0$

$\Gamma(\phi\phi)/\Gamma_{total}$ — Γ_5/Γ

VALUE (units 10^{-4})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
71±28 OUR EVALUATION (Treating systematic errors as correlated.)					
71±22 OUR AVERAGE					
74±18±24	80	[17] BAI	90B	MRK3	$J/\psi \to \gamma K^+ K^- K^+ K^-$
67±21±24		[17] BAI	90B	MRK3	$J/\psi \to \gamma K^+ K^- K^0_S K^0_L$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
31± 7±10	19	[17] BISELLO	91	DM2	$J/\psi \to \gamma K^+ K^- K^+ K^-$
$30^{+18}_{-12}\pm10$	5	[17] BISELLO	91	DM2	$J/\psi \to \gamma K^+ K^- K^0_S K^0_L$

$\Gamma(a_0(980)\pi)/\Gamma_{total}$ — Γ_6/Γ

VALUE	*CL%*	*DOCUMENT ID*	*TECN*	*COMMENT*
<0.02	90	[17,18] BALTRUSAIT...86	MRK3	$J/\psi \to \eta_c \gamma$

$\Gamma(a_2(1320)\pi)/\Gamma_{total}$ — Γ_7/Γ

VALUE	*CL%*	*DOCUMENT ID*	*TECN*	*COMMENT*
<0.02	90	[17] BALTRUSAIT...86	MRK3	$J/\psi \to \eta_c \gamma$

$\Gamma(f_2(1270)\eta)/\Gamma_{total}$ — Γ_9/Γ

VALUE	*CL%*	*DOCUMENT ID*	*TECN*	*COMMENT*
<0.011	90	[17] BALTRUSAIT...86	MRK3	$J/\psi \to \eta_c \gamma$

$\Gamma(\omega\omega)/\Gamma_{total}$ — Γ_{10}/Γ

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<0.0031	90	[17] BALTRUSAIT...86		MRK3	$J/\psi \to \eta_c \gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0063		[17] BISELLO	91	DM2	$J/\psi \to \gamma\omega\omega$

$\Gamma(K\overline{K}\pi)/\Gamma_{total}$ — Γ_{11}/Γ

VALUE	*CL%*	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.055 ±0.017 OUR EVALUATION (Treating systematic errors as correlated.)						
0.055 ±0.008 OUR AVERAGE						
0.0690±0.0142±0.0132		33	[17] BISELLO	91	DM2	$J/\psi \to \gamma K^+ K^- \pi^0$
0.0543±0.0094±0.0094		68	[17] BISELLO	91	DM2	$J/\psi \to \gamma K^\pm \pi^\mp K^0_S$
0.048 ±0.011		95	[17,19] BALTRUSAIT...86		MRK3	$J/\psi \to \eta_c \gamma$
$0.161\ {}^{+0.092}_{-0.073}$			[20] HIMEL	80B	MRK2	$\psi(2S) \to \eta_c \gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.107	90		[17] PARTRIDGE	80B	CBAL	$J/\psi \to \eta_c \gamma$

$\Gamma(\eta\pi\pi)/\Gamma_{\rm total}$ — Γ_{12}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.049±0.018 OUR EVALUATION					
0.047±0.015 OUR AVERAGE					
0.054±0.020	75	[17] BALTRUSAIT...	86	MRK3	$J/\psi \rightarrow \eta_c\gamma$
0.037±0.013±0.020	18	[17] PARTRIDGE	80B	CBAL	$J/\psi \rightarrow \eta\pi^+\pi^-\gamma$

$\Gamma(\pi^+\pi^- K^+ K^-)/\Gamma_{\rm total}$ — Γ_{13}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$0.020^{+0.007}_{-0.006}$ OUR AVERAGE					
0.021±0.007	110	[17] BALTRUSAIT...	86	MRK3	$J/\psi \rightarrow \eta_c\gamma$
$0.014^{+0.022}_{-0.009}$		[20] HIMEL	80B	MRK2	$\psi(2S) \rightarrow \eta_c\gamma$

$\Gamma(2(\pi^+\pi^-))/\Gamma_{\rm total}$ — Γ_{15}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.012 ±0.004 OUR EVALUATION					
0.0120±0.0031 OUR AVERAGE					
0.0105±0.0017±0.0034	137	[17] BISELLO	91	DM2	$J/\psi \rightarrow \gamma 2\pi^+ 2\pi^-$
0.013 ±0.006	25	[17] BALTRUSAIT...	86	MRK3	$J/\psi \rightarrow \eta_c\gamma$
$0.020\ ^{+0.015}_{-0.010}$		[20] HIMEL	80B	MRK2	$\psi(2S) \rightarrow \eta_c\gamma$

$\Gamma(2(K^+K^-))/\Gamma_{\rm total}$ — Γ_{14}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.021±0.010±0.006	[21] ALBRECHT	94H	ARG	$\gamma\gamma \rightarrow K^+K^-K^+K^-$

$\Gamma(p\overline{p})/\Gamma_{\rm total}$ — Γ_{16}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
12± 4 OUR AVERAGE					
10± 3±4	18	[17] BISELLO	91	DM2	$J/\psi \rightarrow \gamma p\overline{p}$
11± 6	23	[17] BALTRUSAIT...	86	MRK3	$J/\psi \rightarrow \eta_c\gamma$
29^{+29}_{-15}		[20] HIMEL	80B	MRK2	$\psi(2S) \rightarrow \eta_c\gamma$

$\Gamma(K\overline{K}\eta)/\Gamma_{\rm total}$ — Γ_{17}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.031	90	[17] BALTRUSAIT...	86	MRK3	$J/\psi \rightarrow \eta_c\gamma$

$\Gamma(\pi^+\pi^- p\overline{p})/\Gamma_{\rm total}$ — Γ_{18}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.012	90	HIMEL	80B	MRK2	$\psi(2S) \rightarrow \eta_c\gamma$

$\Gamma(\Lambda\overline{\Lambda})/\Gamma_{\rm total}$ — Γ_{19}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.002	90	[17] BISELLO	91	DM2	$e^+e^- \rightarrow \gamma\Lambda\overline{\Lambda}$

$\Gamma_i\Gamma_f/\Gamma^2_{total}$ in $p\overline{p} \to \eta_c(1S) \to \phi\phi$ — $\Gamma_{16}\Gamma_5/\Gamma^2$

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
$4.0^{+3.5}_{-3.2}$	BAGLIN	89	SPEC	$\overline{p}p \to K^+K^-K^+K^-$

[17] The quoted branching ratios use B($J/\psi(1S) \to \gamma\eta_c(1S)$) = 0.0127 ± 0.0036. Where relevant, the error in this branching ratio is treated as a common systematic in computing averages.
[18] We are assuming B($a_0(980) \to \eta\pi$) >0.5.
[19] Average from $K^+K^-\pi^0$ and $K^\pm K^0$'s$\pi^\mp$ decay channels.
[20] Estimated using B($\psi(2S) \to \gamma\eta_c(1S)$) = 0.0028 ± 0.0006.
[21] Normalized to the sum of B($\eta_c \to K^\pm K^0_S\pi^\mp$), B($\eta_c \to \phi\phi$), B($\eta_c \to K^+K^-\pi^+\pi^-$), and B($\eta_c \to 2\pi^+2\pi^-$).

RADIATIVE DECAYS

$\Gamma(\gamma\gamma)/\Gamma_{total}$ — Γ_{20}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
3.0 ±1.2 OUR AVERAGE					
$2.80^{+0.67}_{-0.58}\pm1.0$		ARMSTRONG	95F	E760	$\overline{p}p \to \gamma\gamma$
$6\ ^{+4}_{-3}\ \pm4$		BAGLIN	87B	SPEC	$\overline{p}p \to \gamma\gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
< 9	90	[17] BISELLO	91	DM2	$J/\psi \to \gamma\gamma\gamma$
<18	90	[22] BLOOM	83	CBAL	$J/\psi \to \eta_c\gamma$

[22] Using B($J/\psi(1S) \to \gamma\eta_c(1S)$) = 0.0127 ± 0.0036.

$\Gamma_i\Gamma_f/\Gamma^2_{total}$ in $p\overline{p} \to \eta_c(1S) \to \gamma\gamma$ — $\Gamma_{16}\Gamma_{20}/\Gamma^2$

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
$0.36^{+0.08}_{-0.07}$ OUR AVERAGE		Error includes scale factor of 1.1.			
$0.336^{+0.080}_{-0.070}$		ARMSTRONG	95F	E760	$\overline{p}p \to \gamma\gamma$
$0.68^{+0.42}_{-0.31}$	12	BAGLIN	87B	SPEC	$\overline{p}p \to \gamma\gamma$

$\eta_c(1S)$ REFERENCES

BAI	00F	PR D62 072001	J.Z. Bai *et al.*	(BES Collab.)
BRANDENB...	00B	PRL 85 3095	G. Brandenburg *et al.*	(CLEO Collab.)
ACCIARRI	99T	PL B461 155	M. Acciarri *et al.*	(L3 Collab.)
BAI	99B	PR D60 072001	J.Z. Bai *et al.*	(BES Collab.)
ABREU	98O	PL B441 479	P. Abreu *et al.*	(DELPHI Collab.)
SHIRAI	98	PL B424 405	M. Shirai *et al.*	(AMY Collab.)
ARMSTRONG	95F	PR D52 4839	T.A. Armstrong *et al.*	(FNAL, FERR, GENO+)
ALBRECHT	94H	PL B338 390	H. Albrecht *et al.*	(ARGUS Collab.)
ADRIANI	93N	PL B318 575	O. Adriani *et al.*	(L3 Collab.)
BISELLO	91	NP B350 1	D. Bisello *et al.*	(DM2 Collab.)
BAI	90B	PRL 65 1309	Z. Bai *et al.*	(Mark III Collab.)
CHEN	90B	PL B243 169	W.Y. Chen *et al.*	(CLEO Collab.)
BAGLIN	89	PL B231 557	C. Baglin, S. Baird, G. Bassompierre	(R704 Collab.)

BEHREND	89	ZPHY C42 367	H.J. Behrend *et al.*	(CELLO Collab.)
BRAUNSCH...	89	ZPHY C41 533	W. Braunschweig *et al.*	(TASSO Collab.)
AIHARA	88D	PRL 60 2355	H. Aihara *et al.*	(TPC Collab.)
BAGLIN	87B	PL B187 191	C. Baglin *et al.*	(R704 Collab.)
BALTRUSAIT...	86	PR D33 629	R.M. Baltrusaitis *et al.*	(Mark III Collab.)
BERGER	86	PL 167B 120	C. Berger *et al.*	(PLUTO Collab.)
GAISER	86	PR D34 711	J. Gaiser *et al.*	(Crystal Ball Collab.)
ALTHOFF	85B	ZPHY C29 189	M. Althoff *et al.*	(TASSO Collab.)
BALTRUSAIT...	84	PRL 52 2126	R.M. Baltrusaitis *et al.*	(CIT, UCSC+) JP
BLOOM	83	ARNS 33 143	E.D. Bloom, C. Peck	(SLAC, CIT)
HIMEL	80B	PRL 45 1146	T.M. Himel *et al.*	(SLAC, LBL, UCB)
PARTRIDGE	80B	PRL 45 1150	R. Partridge *et al.*	(CIT, HARV, PRIN+)

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