

Reference = DAI 14A; PR D90 036004
Verifier code = PENNINGTON

PLEASE READ NOW

*PLEASE
REPLY
WITHIN
ONE WEEK*

Normally we send all verifications for one experiment to one person, usually the spokesperson or data-analysis coordinator, who then distributes them to the appropriate people. Please tell us if we should send the verifications for your experiment to someone else.

Michael Pennington

EMAIL: michaelp@jlab.org

July 21, 2016

Dear Colleague,

- (1) Please check the results of your experiment carefully. They are marked.
- (2) Please reply within one week.
- (3) Please reply even if everything is correct.
- (4) IMPORTANT!! Please tell WHICH papers you are verifying. We have lots of requests out.
- (5) Feel free to make comments on our treatment of any of the results (not just yours) you see.

Thank you for helping us make the Review accurate and useful.

Sincerely,

Simon Eidelman
BINP, Budker Inst. of Nuclear Physics
Prospekt Lavrent'eva 11
RU-630090 Novosibirsk
Russian Federation

EMAIL: simon.eidelman@cern.ch

LIGHT UNFLAVORED MESONS

($S = C = B = 0$)

For $I = 1$ (π, b, ρ, a): $u\bar{d}, (u\bar{u}-d\bar{d})/\sqrt{2}, d\bar{u};$
for $I = 0$ ($\eta, \eta', h, h', \omega, \phi, f, f'$): $c_1(u\bar{u} + d\bar{d}) + c_2(s\bar{s})$

$f_0(500)$ or σ
was $f_0(600)$

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

NODE=MXXX005

NODE=MXXX005

NODE=M014

$f_0(500)$ PARTIAL WIDTHS

NODE=M014220

 $\Gamma(\gamma\gamma)$ Γ_2

VALUE (keV)

DOCUMENT ID

TECN

COMMENT

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

YOUR DATA

2.05±0.21	55 DAI	14A	RVUE	Compilation
1.7 ±0.4	56 HOFERICHTER11		RVUE	Compilation
3.08±0.82	57 MENNESSIER 11		RVUE	Compilation
2.08±0.2 $^{+0.07}_{-0.04}$	58 MOUSSALLAM11		RVUE	Compilation
2.08	59 MAO	09	RVUE	Compilation
1.2 ±0.4	60 BERNABEU	08	RVUE	
3.9 ±0.6	57 MENNESSIER 08		RVUE	$\gamma\gamma \rightarrow \pi^+\pi^-, \pi^0\pi^0$
1.8 ±0.4	61 OLLER	08	RVUE	Compilation
1.68±0.15	61,62 OLLER	08A	RVUE	Compilation
3.1 ±0.5	63,64 PENNINGTON 08		RVUE	Compilation
2.4 ±0.4	64,65 PENNINGTON 08		RVUE	Compilation
4.1 ±0.3	66 PENNINGTON 06		RVUE	$\gamma\gamma \rightarrow \pi^0\pi^0$
3.8 ±1.5	67,68 BOGLIONE	99	RVUE	$\gamma\gamma \rightarrow \pi^+\pi^-, \pi^0\pi^0$
5.4 ±2.3	67 MORGAN	90	RVUE	$\gamma\gamma \rightarrow \pi^+\pi^-, \pi^0\pi^0$
10 ±6	COURAU	86	DM1	$e^+e^- \rightarrow \pi^+\pi^- e^+e^-$

OCCUR=2

YOUR NOTE

- 55 Using dispersive analysis with phases from GARCIA-MARTIN 11A and BUETTAKER 04 as input.
- 56 Using Roy-Steiner equations with $\pi\pi$ phase shifts from an update of COLANGELO 01 and from GARCIA-MARTIN 11A.
- 57 Using an analytic K-matrix model.
- 58 Using dispersion integral with phase input from Roy equations and data from MARSISKE 90, BOYER 90, BEHREND 92, UEHARA 08A, and MORI 07.
- 59 Used dispersion theory. The value quoted used the $f_0(500)$ pole position of 457 - i276 MeV.
- 60 Using p, n polarizabilities from PDG 06 and fitting to $\pi\pi$ phase motion from GARCIA-MARTIN 07 and σ -poles from GARCIA-MARTIN 07 and CAPRINI 06.
- 61 Using twice-subtracted dispersion integrals.
- 62 Supersedes OLLER 08.
- 63 Solution A (preferred solution based on χ^2 -analysis).
- 64 Dispersion theory based amplitude analysis of BOYER 90, MARSISKE 90, BEHREND 92, and MORI 07.
- 65 Solution B (worse than solution A; still acceptable when systematic uncertainties are included).
- 66 Using unitarity and the σ pole position from CAPRINI 06.
- 67 This width could equally well be assigned to the $f_0(1370)$. The authors analyse data from BOYER 90 and MARSISKE 90 and report strong correlation with $\gamma\gamma$ width of $f_2(1270)$.
- 68 Supersedes MORGAN 90.

NODE=M014W2;LINKAGE=B

NODE=M014W2;LINKAGE=HO

NODE=M014W2;LINKAGE=ME

NODE=M014W2;LINKAGE=MO

NODE=M014W2;LINKAGE=MA

NODE=M014W2;LINKAGE=BE

NODE=M014W2;LINKAGE=OL

NODE=M014W2;LINKAGE=LL

NODE=M014W2;LINKAGE=P1

NODE=M014W2;LINKAGE=P3

NODE=M014W2;LINKAGE=P2

NODE=M014W2;LINKAGE=PE

NODE=M014W2;LINKAGE=A

NODE=M014W2;LINKAGE=BL

$f_0(500)$ REFERENCES

NODE=M014

YOUR PAPER

DAI	14A	PR D90 036004	L.-Y. Dai, M.R. Pennington	(CEBAF)
GARCIA-MAR...11A		PR D83 074004	R. Garcia-Martin <i>et al.</i>	(MADR, CRAC)
HOFERICHTER 11		EPJ C71 1743	M. Hoferichter, D.R. Phillips, C. Schat	(BONN+)
MENNESSIER 11		PL B696 40	G. Mennessier, S. Narison, X.-G. Wang	
MOUSSALLAM 11		EPJ C71 1814	B. Moussallam	
MAO	09	PR D79 116008	Y. Mao <i>et al.</i>	
BERNABEU	08	PRL 100 241804	J. Bernabeu, J. Prades	(IFIC, GRAN)
MENNESSIER	08	PL B665 205	G. Mennessier, S. Narison, W. Ochs	
OLLER	08	PL B659 201	J.A. Oller, L. Roca, C. Schat	(MURC, UBA)
OLLER	08A	EPJ A37 15	J.A. Oller, L. Roca	(MURC)
PENNINGTON	08	EPJ C56 1	M.R. Pennington <i>et al.</i>	

REFID=55923

REFID=54121

REFID=53966

REFID=53637

REFID=53975

REFID=52992

REFID=52271

REFID=52299

REFID=53976

REFID=53977

REFID=52303

UEHARA 08A PR D78 052004
 GARCIA-MAR...07 PR D76 074034
 MORI 07 PR D75 051101
 CAPRINI 06 PRL 96 132001
 PDG 06 JP G33 1
 PENNINGTON 06 PRL 97 011601
 BUETTIKER 04 EPJ C33 409
 COLANGELO 01 NP B603 125
 BOGLIONE 99 EPJ C9 11
 BEHREND 92 ZPHY C56 381
 BOYER 90 PR D42 1350
 MARSISKE 90 PR D41 3324
 MORGAN 90 ZPHY C48 623
 COURAU 86 NP B271 1

S. Uehara *et al.* (BELLE Collab.)
 R. Garcia-Martin, J.R. Pelaez, F.J. Yndurain
 T. Mori *et al.* (BELLE Collab.)
 I. Caprini, G. Colangelo, H. Leutwyler (BCIP+)
 W.-M. Yao *et al.* (PDG Collab.)
 M.R. Pennington
 P. Buettiker, S. Descotes-Genon, B. Moussallam
 G. Colangelo, J. Gasser, H. Leutwyler
 M. Boggione, M.R. Pennington
 H.J. Behrend (CELLO Collab.)
 J. Boyer *et al.* (Mark II Collab.)
 H. Marsiske *et al.* (Crystal Ball Collab.)
 D. Morgan, M.R. Pennington (RAL, DURH)
 A. Courau *et al.* (CLER, LALO)

REFID=52309
 REFID=51949
 REFID=51652
 REFID=51076
 REFID=51004
 REFID=51184
 REFID=56428;ERROR=1
 REFID=49180
 REFID=46931
 REFID=43172
 REFID=41362
 REFID=41351
 REFID=41583
 REFID=44510
 NODE=M003

$f_0(980)$

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

See also the minireview on scalar mesons under $f_0(500)$. (See the index for the page number.)

NODE=M003

$f_0(980)$ PARTIAL WIDTHS

$\Gamma(\gamma\gamma)$

Γ_3

VALUE (keV) DOCUMENT ID TECN COMMENT

0.31 $^{+0.05}_{-0.04}$ OUR AVERAGE

YOUR DATA	0.32 ± 0.05	¹ DAI	14A	RVUE	Compilation
	0.286 $\pm 0.017^{+0.211}_{-0.070}$	² UEHARA	08A	BELL	10.6 $e^+e^- \rightarrow e^+e^-\pi^0\pi^0$
	0.205 $^{+0.095+0.147}_{-0.083-0.117}$	³ MORI	07	BELL	10.6 $e^+e^- \rightarrow e^+e^-\pi^+\pi^-$
	0.42 $\pm 0.06 \pm 0.18$	⁴ OEST	90	JADE	$e^+e^- \rightarrow e^+e^-\pi^0\pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
	0.16 ± 0.01	⁵ MENNESSIER	11	RVUE	
	0.29 $\pm 0.21^{+0.02}_{-0.07}$	⁶ MOUSSALLAM	11	RVUE	Compilation
	0.42	^{7,8} PENNINGTON	08	RVUE	Compilation
	0.10	^{8,9} PENNINGTON	08	RVUE	Compilation
	0.28 $^{+0.09}_{-0.13}$	¹⁰ BOGLIONE	99	RVUE	$\gamma\gamma \rightarrow \pi^+\pi^-, \pi^0\pi^0$
	0.29 $\pm 0.07 \pm 0.12$	^{11,12} BOYER	90	MRK2	$e^+e^- \rightarrow e^+e^-\pi^+\pi^-$
	0.31 $\pm 0.14 \pm 0.09$	^{11,12} MARSISKE	90	CBAL	$e^+e^- \rightarrow e^+e^-\pi^0\pi^0$
	0.63 ± 0.14	¹³ MORGAN	90	RVUE	$\gamma\gamma \rightarrow \pi^+\pi^-, \pi^0\pi^0$

OCCUR=2

- YOUR NOTE
- ¹ Using dispersive analysis with phases from GARCIA-MARTIN 11A and BUETTIKER 04 as input.
 - ² Using finite width corrections according to FLATTE 76 and ACHASOV 05, and the ratio $g_{f_0 K K}/g_{f_0 \pi \pi} = 0$.
 - ³ Using finite width corrections according to FLATTE 76 and ACHASOV 05, and the ratio $g_{f_0 K K}/g_{f_0 \pi \pi} = 4.21 \pm 0.25 \pm 0.21$ from ABLIKIM 05.
 - ⁴ OEST 90 quote systematic errors $^{+0.08}_{-0.18}$. We use ± 0.18 . Observed 60 events.
 - ⁵ Uses an analytic K-matrix model. Compilation.
 - ⁶ Using dispersion integral with phase input from Roy equations and data from MARSISKE 90, BOYER 90, BEHREND 92, UEHARA 08A, and MORI 07.
 - ⁷ Solution A (preferred solution based on χ^2 -analysis).
 - ⁸ Dispersion theory based amplitude analysis of BOYER 90, MARSISKE 90, BEHREND 92, and MORI 07.
 - ⁹ Solution B (worse than solution A; still acceptable when systematic uncertainties are included).
 - ¹⁰ Supersedes MORGAN 90.
 - ¹¹ From analysis allowing arbitrary background unconstrained by unitarity.
 - ¹² Data included in MORGAN 90, BOGLIONE 99 analyses.
 - ¹³ From amplitude analysis of BOYER 90 and MARSISKE 90, data corresponds to resonance parameters $m = 989$ MeV, $\Gamma = 61$ MeV.

NODE=M003W4;LINKAGE=D

NODE=M003W4;LINKAGE=UE

NODE=M003W4;LINKAGE=MO

NODE=M003W4;LINKAGE=H
 NODE=M003W4;LINKAGE=ME
 NODE=M003W4;LINKAGE=MU

NODE=M003W4;LINKAGE=P1
 NODE=M003W4;LINKAGE=P3

NODE=M003W4;LINKAGE=P2

NODE=M003W4;LINKAGE=BL
 NODE=M003W4;LINKAGE=B
 NODE=M003W4;LINKAGE=C
 NODE=M003W4;LINKAGE=A

$f_0(980)$ REFERENCES

YOUR PAPER	DAI 14A	PR D90 036004	L.-Y. Dai, M.R. Pennington	(CEBAF)
	GARCIA-MAR...11A	PR D83 074004	R. Garcia-Martin <i>et al.</i>	(MADR, CRAC)
	MENNESSIER 11	PL B696 40	G. Mennessier, S. Narison, X.-G. Wang	
	MOUSSALLAM 11	EPJ C71 1814	B. Moussallam	
	PENNINGTON 08	EPJ C56 1	M.R. Pennington <i>et al.</i>	
	UEHARA 08A	PR D78 052004	S. Uehara <i>et al.</i>	(BELLE Collab.)
	MORI 07	PR D75 051101	T. Mori <i>et al.</i>	(BELLE Collab.)

NODE=M003

REFID=55923
 REFID=54121
 REFID=53637
 REFID=53975
 REFID=52303
 REFID=52309
 REFID=51652

ABLIKIM 05 PL B607 243
 ACHASOV 05 PR D72 013006
 BUETTAKER 04 EPJ C33 409
 BOGLIONE 99 EPJ C9 11
 BEHREND 92 ZPHY C56 381
 BOYER 90 PR D42 1350
 MARSISKE 90 PR D41 3324
 MORGAN 90 ZPHY C48 623
 OEST 90 ZPHY C47 343
 FLATTE 76 PL 63B 224

M. Ablikim *et al.* (BES Collab.)
 N.N. Achasov, G.N. Shestakov
 P. Buettiker, S. Descotes-Genon, B. Moussallam
 M. Boggione, M.R. Pennington
 H.J. Behrend (CELLO Collab.)
 J. Boyer *et al.* (Mark II Collab.)
 H. Marsiske *et al.* (Crystal Ball Collab.)
 D. Morgan, M.R. Pennington (RAL, DURH)
 T. Oest *et al.* (JADE Collab.)
 S.M. Flatte (CERN)

REFID=50450
 REFID=50762
 REFID=56428;ERROR=2
 REFID=46931
 REFID=43172
 REFID=41362
 REFID=41351
 REFID=41583
 REFID=41358
 REFID=20446
 NODE=M005

$f_2(1270)$

$$I^G(J^{PC}) = 0^+(2^{++})$$

$f_2(1270)$ PARTIAL WIDTHS

$\Gamma(\gamma\gamma)$

The value of this width depends on the theoretical model used. Unitary approaches with scalars typically (with exception of PENNINGTON 08) give values clustering around 2.6 keV; without an *S*-wave contribution, values are systematically higher (typically around 3 keV).

Γ_7

VALUE (keV)	EVTS	DOCUMENT ID	TECN	COMMENT
2.93±0.40		¹ DAI 14A	RVUE	Compilation
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.14±0.20		^{2,3} PENNINGTON 08	RVUE	Compilation
3.82±0.30		^{3,4} PENNINGTON 08	RVUE	Compilation
2.55±0.15	870	⁵ SCHEGELSKY 06A	RVUE	$\gamma\gamma \rightarrow K_S^0 K_S^0$
2.84±0.35		BOGLIONE 99	RVUE	$\gamma\gamma \rightarrow \pi^+ \pi^-, \pi^0 \pi^0$
2.93±0.23±0.32		⁶ YABUKI 95	VNS	
2.58±0.13 ^{+0.36} _{-0.27}		⁷ BEHREND 92	CELL	$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^-$
3.10±0.35±0.35		⁸ BLINOV 92	MD1	$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^-$
2.27±0.47±0.11		ADACHI 90D	TOPZ	$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^-$
3.15±0.04±0.39		BOYER 90	MRK2	$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^-$
3.19±0.16 ^{+0.29} _{-0.28}		MARSISKE 90	CBAL	$e^+ e^- \rightarrow e^+ e^- \pi^0 \pi^0$
2.35±0.65		⁹ MORGAN 90	RVUE	$\gamma\gamma \rightarrow \pi^+ \pi^-, \pi^0 \pi^0$
3.19±0.09 ^{+0.22} _{-0.38}	2177	OEST 90	JADE	$e^+ e^- \rightarrow e^+ e^- \pi^0 \pi^0$
3.2 ±0.1 ±0.4		¹⁰ AIHARA 86B	TPC	$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^-$
2.5 ±0.1 ±0.5		BEHREND 84B	CELL	$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^-$
2.85±0.25±0.5		¹¹ BERGER 84	PLUT	$e^+ e^- \rightarrow e^+ e^- 2\pi$
2.70±0.05±0.20		COURAU 84	DLCO	$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^-$
2.52±0.13±0.38		¹² SMITH 84C	MRK2	$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^-$
2.7 ±0.2 ±0.6		EDWARDS 82F	CBAL	$e^+ e^- \rightarrow e^+ e^- 2\pi^0$
2.9 ^{+0.6} _{-0.4} ±0.6		¹³ EDWARDS 82F	CBAL	$e^+ e^- \rightarrow e^+ e^- 2\pi^0$
3.2 ±0.2 ±0.6		BRANDELIK 81B	TASS	$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^-$
3.6 ±0.3 ±0.5		ROUSSARIE 81	MRK2	$e^+ e^- \rightarrow e^+ e^- \pi^+ \pi^-$
2.3 ±0.8		¹⁴ BERGER 80B	PLUT	$e^+ e^-$

NODE=M005220

NODE=M005W8

NODE=M005W8

NODE=M005W8

OCCUR=2

OCCUR=3

OCCUR=2

YOUR NOTE

- ⁵ From analysis of L3 data at 91 and 183–209 GeV and using SU(3) relations.
¹ Based on a *K*-matrix analysis of BELLE data from MORI 07, UEHARA 08A, UEHARA 09 and UEHARA 13. The width is derived for the pole on the third sheet which is closest to the physical axis. Supersedes PENNINGTON 08.
² Solution A (preferred solution based on χ^2 -analysis).
³ Dispersion theory based amplitude analysis of BOYER 90, MARSISKE 90, BEHREND 92, and MORI 07.
⁴ Solution B (worse than solution A; still acceptable when systematic uncertainties are included).
⁶ With a narrow scalar state around 1220 MeV.
⁷ Using a unitarized model with a 300 - 500 keV wide scalar at 1100 MeV.
⁸ Using the unitarized model of LYTH 85.
⁹ Error includes spread of different solutions. Data of MARK2 and CRYSTAL BALL used in the analysis. Authors report strong correlations with $\gamma\gamma$ width of $f_0(1370)$: $\Gamma(f_2) + 1/4 \Gamma(f_0) = 3.6 \pm 0.3$ KeV.
¹⁰ Radiative corrections modify the partial widths; for instance the COURAU 84 value becomes 2.66 ± 0.21 in the calculation of LANDRO 86.
¹¹ Using the MENNESSIER 83 model.
¹² Superseded by BOYER 90.
¹³ If helicity = 2 assumption is not made.

NODE=M005W1;LINKAGE=SC
 NODE=M005W8;LINKAGE=A

NODE=M005W8;LINKAGE=P1
 NODE=M005W8;LINKAGE=P3

NODE=M005W8;LINKAGE=P2

NODE=M005W8;LINKAGE=YA
 NODE=M005W8;LINKAGE=B
 NODE=M005W8;LINKAGE=A
 NODE=M005PW;LINKAGE=C

NODE=M005PW;LINKAGE=B

NODE=M005PW;LINKAGE=X
 NODE=M005PW;LINKAGE=V
 NODE=M005PW;LINKAGE=H

¹⁴ Using mass, width and $B(f_2(1270) \rightarrow 2\pi)$ from PDG 78.

$f_2(1270) \Gamma(i) \Gamma(\gamma\gamma) / \Gamma(\text{total})$				
Helicity-0/Helicity-2 RATIO IN $\gamma\gamma \rightarrow f_2(1270) \rightarrow \pi\pi$				
VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT	
$3.7 \pm 0.3^{+15.9}_{-2.9}$	UEHARA	08A	BELL	$10.6 e^+ e^- \rightarrow e^+ e^- \pi^0 \pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
YOUR DATA	9.5 ± 1.8	¹ DAI	14A	RVUE Compilation
	13	2,3	PENNINGTON	08 RVUE Compilation
	26	3,4	PENNINGTON	08 RVUE Compilation
YOUR NOTE	¹ Based on a <i>K</i> -matrix analysis of BELLE data from MORI 07, UEHARA 08A, UEHARA 09 and UEHARA 13. The width is derived for the pole on the third sheet which is closest to the physical axis.			
	² Solution A (preferred solution based on χ^2 -analysis).			
	³ Dispersion theory based amplitude analysis of BOYER 90, MARSISKE 90, BEHREND 92, and MORI 07.			
	⁴ Solution B (worse than solution A; still acceptable when systematic uncertainties are included).			

$f_2(1270)$ REFERENCES				
YOUR PAPER	DAI	14A	PR D90 036004	L.-Y. Dai, M.R. Pennington
	UEHARA	13	PTEP 2013 123C01	S. Uehara <i>et al.</i>
	UEHARA	09	PR D79 052009	S. Uehara <i>et al.</i>
	PENNINGTON	08	EPJ C56 1	M.R. Pennington <i>et al.</i>
	UEHARA	08A	PR D78 052004	S. Uehara <i>et al.</i>
	MORI	07	PR D75 051101	T. Mori <i>et al.</i>
	SCHEGELSKY	06A	EPJ A27 207	V.A. Schegelsky <i>et al.</i>
	BOGLIONE	99	EPJ C9 11	M. Boglione, M.R. Pennington
	YABUKI	95	JPSJ 64 435	F. Yabuki <i>et al.</i>
	BEHREND	92	ZPHY C56 381	H.J. Behrend
	BLINOV	92	ZPHY C53 33	A.E. Blinov <i>et al.</i>
	ADACHI	90D	PL B234 185	I. Adachi <i>et al.</i>
	BOYER	90	PR D42 1350	J. Boyer <i>et al.</i>
	MARSISKE	90	PR D41 3324	H. Marsiske <i>et al.</i>
	MORGAN	90	ZPHY C48 623	D. Morgan, M.R. Pennington
	OEST	90	ZPHY C47 343	T. Oest <i>et al.</i>
	AIHARA	86B	PRL 57 404	H. Aihara <i>et al.</i>
	LANDRO	86	PL B172 445	M. Landro, K.J. Mork, H.A. Olsen
	LYTH	85	JP G11 459	D.H. Lyth
	BEHREND	84B	ZPHY C23 223	H.J. Behrend <i>et al.</i>
	BERGER	84	ZPHY C26 199	C. Berger <i>et al.</i>
	COURAU	84	PL 147B 227	A. Courau <i>et al.</i>
	SMITH	84C	PR D30 851	J.R. Smith <i>et al.</i>
	MENNESSIER	83	ZPHY C16 241	G. Mennessier
	EDWARDS	82F	PL 110B 82	C. Edwards <i>et al.</i>
	BRANDELIK	81B	ZPHY C10 117	R. Brandelik <i>et al.</i>
	ROUSSARIE	81	PL 105B 304	A. Roussarie <i>et al.</i>
	BERGER	80B	PL 94B 254	C. Berger <i>et al.</i>
	PDG	78	PL 75B 1	C. Bricman <i>et al.</i>

NODE=M005PW;LINKAGE=A

NODE=M005223

NODE=M005HR0
NODE=M005HR0

OCCUR=2

OCCUR=3

NODE=M005HR0;LINKAGE=A

NODE=M005HR0;LINKAGE=P1

NODE=M005HR0;LINKAGE=P3

NODE=M005HR0;LINKAGE=P2

NODE=M005

REFID=55923
REFID=55592
REFID=52761
REFID=52303
REFID=52309
REFID=51652
REFID=51185
REFID=46931
REFID=46384
REFID=43172
REFID=41858
REFID=41345
REFID=41362
REFID=41351
REFID=41583
REFID=41358
REFID=20764
REFID=20767
REFID=42169
REFID=20757
REFID=20760
REFID=20758
REFID=20759
REFID=20393
REFID=20747
REFID=20741
REFID=20388
REFID=20736
REFID=40124