Further States

NODE=M300

OMITTED FROM SUMMARY TABLE

This section contains states observed by a single group or states poorly established that thus need confirmation.

NODE=M300

QUANTUM NUMBERS, MASSES, WIDTHS, AND BRANCHING RATIOS

$X(360)$ $I^G(J^{PC}) = ?^?(?^{?+})$

NODE=M300K08
NODE=M300K08

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$360 \pm 7 \pm 9$	64 ± 18	2.3k	[1] ABRAAMYAN	09	CNTR	2.75 $dC \rightarrow \gamma\gamma X$

[1] Not seen in $pC \rightarrow \gamma\gamma X$ at 5.5 GeV/c.

NODE=M300K08;LINKAGE=AB

$X(1070)$ $I^G(J^{PC}) = ?^?(0^{++})$

NODE=M300J07
NODE=M300J07

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		COMMENT
1072 ± 1	3.5 ± 0.5	[2] VLADIMIRSK...08		40 $\pi^- p \rightarrow K^0_S K^0_S n$ + mπ^0

[2] Supersedes GRIGOR'EV 05.

NODE=M300J07;LINKAGE=VL

$X(1110)$ $I^G(J^{PC}) = 0^+(\text{even}^{++})$

NODE=M300J30
NODE=M300J30

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1107 ± 4	$111 \pm 8 \pm 15$	DAFTARI	87	DBC	0. $\bar{p}n \rightarrow \rho^- \pi^+ \pi^-$

$f_0(1200–1600)$ $I^G(J^{PC}) = 0^+(0^{++})$

NODE=M300J98
NODE=M300J98

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1323 ± 8	237 ± 20	VLADIMIRSK...06		SPEC	40 $\pi^- p \rightarrow K^0_S K^0_S n$
1480^{+100}_{-150}	1030^{+80}_{-170}	[3] ANISOVICH	03	SPEC	
1530^{+90}_{-250}	560 ± 40	[4] ANISOVICH	03	SPEC	

OCCUR=2

[3] K-matrix pole from combined analysis of $\pi^- p \rightarrow \pi^0\pi^0 n$, $\pi^- p \rightarrow K\overline{K} n$, $\pi^+\pi^- \rightarrow \pi^+\pi^-$, $\bar{p}p \rightarrow \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$, $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, $K^0_S K^0_S \pi^0$, $K^+K^0_S\pi^-$ at rest, $\bar{p}n \rightarrow \pi^-\pi^-\pi^+$, $K^0_S K^-\pi^0$, $K^0_S K^0_S \pi^-$ at rest.

NODE=M300;LINKAGE=KM

[4] K-matrix pole from combined analysis of $\pi^- p \rightarrow \pi^0\pi^0 n$, $\pi^- p \rightarrow K\overline{K} n$, $\bar{p}p \rightarrow \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$ at rest.

NODE=M300;LINKAGE=MK

$X(1420)$ $I^G(J^{PC}) = 2^+(0^{++})$

NODE=M300J61
NODE=M300J61

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1420 ± 20	160 ± 10	FILIPPI	00	OBLX	0 $\bar{n}p \rightarrow \pi^+\pi^+\pi^-$

$X(1545)$ $I^G(J^{PC}) = ?^?(?^{++})$

NODE=M300K07
NODE=M300K07

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		COMMENT
1545 ± 3	6.0 ± 2.5	[5] VLADIMIRSK...08		40 $\pi^- p \rightarrow K^0_S K^0_S n$ + mπ^0

[5] Supersedes VLADIMIRSKII 00.

NODE=M300K07;LINKAGE=VL

$X(1575)$ $I^G(J^{PC}) = ?^?(1^{--})$

NODE=M300J08
NODE=M300J08

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1576^{+49+98}_{-55-91}	$818^{+22+64}_{-23-133}$	[6] ABLIKIM	06S	BES	$J/\psi \rightarrow K^+K^-\pi^0$

[6] A broad peak observed at K^+K^- invariant mass. Mass and width above are its pole position. The observed branching ratio is B($J/\psi \rightarrow X\pi^0$) B($X \rightarrow K^+K^-$) = $(8.5 \pm 0.6^{+2.7}_{-3.6}) \times 10^{-4}$.

NODE=M300J08;LINKAGE=AB

$X(1600)$ $I^G(J^{PC}) = 2^+(2^{++})$

NODE=M300J99
NODE=M300J99

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1600 ± 100	400 ± 200	[7] ALBRECHT	91F	ARG	10.2 $e^+e^- \rightarrow e^+e^-2(\pi^+\pi^-)$

[7] Our estimate. NODE=M300J99;LINKAGE=A

X(1650) $I^G(J^{PC}) = 0^-(?^{?-})$ NODE=M300J62

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT	
1652±7	<50	100	PROKOSHKIN 96	GAM2	32,38 $\pi p \to \omega\eta n$	NODE=M300J62

X(1730) $I^G(J^{PC}) = ?^?(?^{?+})$ NODE=M300K06

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT	
1731.0±1.2±2.0	3.2 ± 0.8 ± 1.3	58	VLADIMIRSK...07	SPEC	40 $\pi^- p \to K^0_S K^0_S X$	NODE=M300K06

X(1750) $I^G(J^{PC}) = ?^?(1^{--})$ NODE=M300J94

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID	TECN	COMMENT	
1753.5±1.5±2.3	122.2 ± 6.2 ± 8.0	LINK 02K	FOCS	20–160 $\gamma p \to K^+ K^- p$	NODE=M300J94

B(X(1750) → $\overline{K}^*(892)^0 K^0$ → $K^\pm\pi^\mp K^0_S$)/B(X(1750) → K^+K^-) NODE=M300B5

VALUE	CL%	DOCUMENT ID	TECN	
<0.065	90	LINK 02K	FOCS	NODE=M300B5

B(X(1750) → $\overline{K}^*(892)^\pm K^\mp$ → $K^\pm\pi^\mp K^0_S$)/B(X(1750) → K^+K^-) NODE=M300B6

VALUE	CL%	DOCUMENT ID	TECN	
<0.183	90	LINK 02K	FOCS	NODE=M300B6

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f_2(1750) $I^G(J^{PC}) = 0^+(2^{++})$ NODE=M300JAM

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT	
1755±10	67 ± 12	870	[8] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$	NODE=M300JAM

Γ($K\overline{K}$) NODE=M300JA1

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT	
17±5	870	[9] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$	NODE=M300JA1

Γ($\gamma\gamma$) NODE=M300JA2

VALUE (keV)	EVTS	DOCUMENT ID	TECN	COMMENT	
0.13±0.04	870	[9] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$	NODE=M300JA2

Γ($\pi\pi$) NODE=M300JA3

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT	
1.3±1.0	870	[9] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$	NODE=M300JA3

Γ($\eta\eta$) NODE=M300JA4

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT	
2.0±0.5	870	[9] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$	NODE=M300JA4

[8] From analysis of L3 data at 91 and 183–209 GeV. NODE=M300JAM;LINKAGE=SC

[9] From analysis of L3 data at 91 and 183–209 GeV and using SU(3) relations. NODE=M300JA;LINKAGE=SC

X(1775) $I^G(J^{PC}) = 1^-(?^{-+})$ NODE=M300J60

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	
1763±20	192 ± 60	CONDO	91	SHF	$\gamma p \to (p\pi^+)(\pi^+\pi^-\pi^-)$	NODE=M300J60
1787±18	118 ± 60	CONDO	91	SHF	$\gamma p \to n\pi^+\pi^+\pi^-$	OCCUR=2

X(1812) $I^G(J^{PC}) = ?^?(?^{?+})$ NODE=M300K29

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	
$1812^{+19}_{-26}\pm18$	105 ± 20 ± 28	[10] ABLIKIM	06J	BES2	$J/\psi \to \gamma\omega\phi$	NODE=M300K29

[10] Favors $J^{PC} = 0^{++}$. Not seen by LIU 09 in $B^\pm \to K^\pm\omega\phi$. NODE=M300K29;LINKAGE=AB

X(1850 - 3100) $I^G(J^{PC}) = ?^?(1^{--})$ NODE=M300K28

Γ(e^+e^-)·B(X → hadrons) (eV)	CL%	DOCUMENT ID		TECN	COMMENT	
<120	90	[11] ANASHIN	11	KEDR	$e^+e^- \to$ hadrons	NODE=M300K28

[11] This limit is center-of-mass energy dependent. We quote the most stringent one.

NODE=M300K28;LINKAGE=AN

$X(1855)$ $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300J31
NODE=M300J31

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1856.6±5	20 ± 5	BRIDGES	86D	SPEC	0. $\bar{p}d \rightarrow \pi\pi N$

$X(1870)$ $I^G(J^{PC}) = ?^?(2^{??})$

NODE=M300J45
NODE=M300J45

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1870±40	250 ± 30	ALDE	86D	GAM4	100 $\pi^- p \rightarrow 2\eta X$

$a_3(1875)$ $I^G(J^{PC}) = 1^-(3^{++})$

NODE=M300J95
NODE=M300J95

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1874±43±96	385 ± 121 ± 114	CHUNG	02	B852	18.3 $\pi^- p \rightarrow \pi^+\pi^-\pi^- p$

B($a_3(1875) \rightarrow f_2(1270)\pi$)/B($a_3(1875) \rightarrow \rho\pi$)

NODE=M300B7
NODE=M300B7

VALUE	DOCUMENT ID		TECN	COMMENT
0.8±0.2	[12] CHUNG	02	B852	18.3 $\pi^- p \rightarrow \pi^+\pi^-\pi^- p$

[12] Using the observable fractions of 50.0% $\rho\pi$, 56.5% $f_2\pi$, and 11.8% $\rho_3\pi$.

NODE=M300B;LINKAGE=C1

B($a_3(1875) \rightarrow \rho_3(1690)\pi$)/B($a_3(1875) \rightarrow \rho\pi$)

NODE=M300B8
NODE=M300B8

VALUE	DOCUMENT ID		TECN	COMMENT
0.9±0.3	[13] CHUNG	02	B852	18.3 $\pi^- p \rightarrow \pi^+\pi^-\pi^- p$

[13] Using the observable fractions of 50.0% $\rho\pi$, 56.5% $f_2\pi$, and 11.8% $\rho_3\pi$.

NODE=M300B8;LINKAGE=C1

$a_1(1930)$ $I^G(J^{PC}) = 1^-(1^{++})$

NODE=M300J92
NODE=M300J92

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1930^{+30}_{-70}	155 ± 45	ANISOVICH	01F	SPEC	2.0 $\bar{p}p \rightarrow 3\pi^0, \pi^0\eta, \pi^0\eta'$

$X(1935)$ $I^G(J^{PC}) = 1^+(1^{-?})$

NODE=M300J33
NODE=M300J33

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1935±20	215 ± 30	EVANGELIS...	79	OMEG	10,16 $\pi^- p \rightarrow \bar{p}pn$

$\rho_2(1940)$ $I^G(J^{PC}) = 1^+(2^{--})$

NODE=M300J85
NODE=M300J85

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1940±40	155 ± 40	[14] ANISOVICH	02	SPEC	0.6–1.9 $p\bar{p} \rightarrow \omega\pi^0, \omega\eta\pi^0, \pi^+\pi^-$

[14] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02.

NODE=M300J85;LINKAGE=AY

$\omega_3(1945)$ $I^G(J^{PC}) = 0^-(3^{--})$

NODE=M300J65
NODE=M300J65

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1945±20	115 ± 22	[15] ANISOVICH	02B	SPEC	0.6–1.9 $p\bar{p} \rightarrow \omega\eta, \omega\pi^0\pi^0$

[15] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B.

NODE=M300J65;LINKAGE=AZ

$a_2(1950)$ $I^G(J^{PC}) = 1^-(2^{++})$

NODE=M300K24
NODE=M300K24

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1950^{+30}_{-70}	180^{+30}_{-70}	[16] ANISOVICH	01F	SPEC	1.96–2.41 $\bar{p}p$

[16] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, and ANISOVICH 01F.

NODE=M300K24;LINKAGE=AN

$\omega(1960)$ $I^G(J^{PC}) = 0^-(1^{--})$

NODE=M300J79
NODE=M300J79

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1960±25	195 ± 60	[17] ANISOVICH	02B	SPEC	0.6–1.9 $p\bar{p} \rightarrow \omega\eta, \omega\pi^0\pi^0$

[17] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J79;LINKAGE=AZ

$b_1(1960)$ $I^G(J^{PC}) = 1^+(1^{+-})$ NODE=M300J67 NODE=M300J67

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1960±35	230 ± 50	[18] ANISOVICH	02	SPEC	0.6–1.9 $p\overline{p} \to \omega\pi^0$, $\omega\eta\pi^0$, $\pi^+\pi^-$

[18] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300J67;LINKAGE=AY

$h_1(1965)$ $I^G(J^{PC}) = 0^-(1^{+-})$ NODE=M300J64 NODE=M300J64

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1965±45	345 ± 75	[19] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta$, $\omega\pi^0\pi^0$

[19] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J64;LINKAGE=AZ

$f_1(1970)$ $I^G(J^{PC}) = 0^+(1^{++})$ NODE=M300J1 NODE=M300J1

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
1971±15	240 ± 45	ANISOVICH	00J	SPEC

$X(1970)$ $I^G(J^{PC}) = ?^?(?^{??})$ NODE=M300J46 NODE=M300J46

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1970±10	40 ± 20	CHLIAPNIK...	80	HBC	32 $K^+p \to 2K^0_S 2\pi X$

$X(1975)$ $I^G(J^{PC}) = ?^?(?^{??})$ NODE=M300J47 NODE=M300J47

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1973±15	80	30	CASO	70	HBC	11.2 $\pi^- p \to \rho 2\pi$

$\omega_2(1975)$ $I^G(J^{PC}) = 0^-(2^{--})$ NODE=M300J81 NODE=M300J81

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1975±20	175 ± 25	[20] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta$, $\omega\pi^0\pi^0$

[20] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J81;LINKAGE=AZ

$a_2(1990)$ $I^G(J^{PC}) = 1^-(2^{++})$ NODE=M300J2 NODE=M300J2

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
2050±10±40	190 ± 22 ± 100	18k	[21] SCHEGELSKY	06	RVUE	$\gamma\gamma \to \pi^+\pi^-\pi^0$
2003±10±19	249 ± 23 ± 32		LU	05	B852	18 $\pi^- p \to \omega\pi^-\pi^0 p$

[21] From analysis of L3 data at 183–209 GeV. NODE=M300J2;LINKAGE=SC

$\Gamma(\gamma\gamma)\ \Gamma(\pi^+\pi^-\pi^0)$ / Γ(total) NODE=M300J2G NODE=M300J2G

VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.11±0.04±0.05	18k	[22] SCHEGELSKY	06	RVUE	$\gamma\gamma \to \pi^+\pi^-\pi^0$

[22] From analysis of L3 data at 183–209 GeV. NODE=M300J2G;LINKAGE=SC

$\rho(2000)$ $I^G(J^{PC}) = 1^+(1^{--})$ NODE=M300J77 NODE=M300J77

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2000±30	260 ± 45	[23] BUGG	04C	RVUE	Compilation
~ 1988	~ 244	HASAN	94	RVUE	$\overline{p}p \to \pi\pi$

[23] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300;LINKAGE=AY

$f_2(2000)$ $I^G(J^{PC}) = 0^+(2^{++})$ NODE=M300J25 NODE=M300J25

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2001±10	312 ± 32	ANISOVICH	00J	SPEC	
~ 1996	~ 134	HASAN	94	RVUE	$\overline{p}p \to \pi\pi$

$X(2000)$ $I^G(J^{PC}) = 1^-(?^?+)$ NODE=M300K01 NODE=M300K01

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	CHG	COMMENT
1964 ± 35	225 ± 50	[24] ARMSTRONG	93D	E760		$\bar{p}p \rightarrow 3\pi^0 \rightarrow 6\gamma$
~ 2100	~ 500	[24] ANTIPOV	77	CIBS	$-$	$25\ \pi^- p \rightarrow p\pi^- \rho_3$
2214 ± 15	355 ± 21	[25] BALTAY	77	HBC	0	$15\ \pi^- p \rightarrow \Delta^{++} 3\pi$
2080 ± 40	340 ± 80	KALELKAR	75	HBC	$+$	$15\ \pi^+ p \rightarrow p\pi^+ \rho_3$

[24] Cannot determine spin to be 3. NODE=M300K01;LINKAGE=AA

[25] BALTAY 77 favors $J^P = ,3^+$. NODE=M300K01;LINKAGE=B

$X(2000)$ $I^G(J^{PC}) = ?^?(4^{++})$ NODE=M300J97 NODE=M300J97

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID	TECN	COMMENT
$1998 \pm 3 \pm 5$	<15	VLADIMIRSK...03	SPEC	$\pi^- p \rightarrow K^0_S K^0_S M M$

$\pi_2(2005)$ $I^G(J^{PC}) = 1^-(2^{-+})$ NODE=M300J71 NODE=M300J71

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$1974 \pm 14 \pm 83$	$341 \pm 61 \pm 139$	145k	LU	05	B852	$18\ \pi^- p \rightarrow \omega\pi^-\pi^0 p$
2005 ± 15	200 ± 40		ANISOVICH	01F	SPEC	$2.0\ \bar{p}p \rightarrow 3\pi^0,\ \pi^0\eta,$ $\pi^0\eta'$

$\eta(2010)$ $I^G(J^{PC}) = 0^+(0^{-+})$ NODE=M300J5 NODE=M300J5

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2010^{+35}_{-60}	270 ± 60	ANISOVICH	00J	SPEC

$\pi_1(2015)$ $I^G(J^{PC}) = 1^-(1^{-+})$ NODE=M300J05 NODE=M300J05

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$2014 \pm 20 \pm 16$	$230 \pm 32 \pm 73$	145k	LU	05	B852	$18\ \pi^- p \rightarrow \omega\pi^-\pi^0 p$
$2001 \pm 30 \pm 92$	$333 \pm 52 \pm 49$	69k	KUHN	04	B852	$18\ \pi^- p \rightarrow \eta\pi^+\pi^-\pi^- p$

$a_0(2020)$ $I^G(J^{PC}) = 1^-(0^{++})$ NODE=M300J6 NODE=M300J6

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2025 ± 30	330 ± 75	ANISOVICH	99C	SPEC

$X(2020)$ $I^G(J^{PC}) = ?^?(?^{??})$ NODE=M300J34 NODE=M300J34

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2015 ± 3	10 ± 4	FERRER	99	RVUE	$\pi p \rightarrow p p \bar{p} \pi(\pi)$

$h_3(2025)$ $I^G(J^{PC}) = 0^-(3^{+-})$ NODE=M300J78 NODE=M300J78

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2025 ± 20	145 ± 30	[26] ANISOVICH	02B	SPEC	0.6–1.9 $p\bar{p} \rightarrow \omega\eta,\ \omega\pi^0\pi^0$

[26] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J78;LINKAGE=AZ

$b_3(2030)$ $I^G(J^{PC}) = 1^+(3^{+-})$ NODE=M300J69 NODE=M300J69

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2032 ± 12	117 ± 11	[27] ANISOVICH	02	SPEC	0.6–1.9 $p\bar{p} \rightarrow \omega\pi^0,$ $\omega\eta\pi^0,\ \pi^+\pi^-$

[27] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300J69;LINKAGE=AY

$a_2(2030)$ $I^G(J^{PC}) = 1^-(2^{++})$ NODE=M300K23 NODE=M300K23

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2030 ± 20	205 ± 30	[28] ANISOVICH	01F	SPEC	1.96–2.41 $\bar{p}p$

[28] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, and ANISOVICH 01F. NODE=M300K23;LINKAGE=AN

$a_3(2030)$ $I^G(J^{PC}) = 1^-(3^{++})$ NODE=M300K20 NODE=M300K20

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2031 ± 12	150 ± 18	[29] ANISOVICH	01F	SPEC	1.96–2.41 $\bar{p}p$

[29] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, and ANISOVICH 01F. NODE=M300K20;LINKAGE=AN

$\eta_2(2030)$ $I^G(J^{PC}) = 0^+(2^{-+})$ NODE=M300J8

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN		NODE=M300J8
$2030 \pm 5 \pm 15$	$205 \pm 10 \pm 15$	ANISOVICH	00E	SPEC		

$B(a_2\pi)_{L=0}/B(a_2\pi)_{L=2}$ NODE=M300B1

VALUE	DOCUMENT ID		TECN	COMMENT	NODE=M300B1
0.05 ± 0.03	[30] ANISOVICH	11	SPEC	0.9–1.94 $p\overline{p}$	

[30] Reanalysis of ADOMEIT 96 and ANISOVICH 00E. NODE=M300B1;LINKAGE=AN

$B(a_0\pi)/B(a_2\pi)_{L=2}$ NODE=M300B2

VALUE	DOCUMENT ID		TECN	COMMENT	NODE=M300B2
0.10 ± 0.08	[31] ANISOVICH	11	SPEC	0.9–1.94 $p\overline{p}$	

[31] Reanalysis of ADOMEIT 96 and ANISOVICH 00E. NODE=M300B2;LINKAGE=AN

$B(f_2\eta)/B(a_2\pi)_{L=2}$ NODE=M300B3

VALUE	DOCUMENT ID		TECN	COMMENT	NODE=M300B3
0.13 ± 0.06	[32] ANISOVICH	11	SPEC	0.9–1.94 $p\overline{p}$	

[32] Reanalysis of ADOMEIT 96 and ANISOVICH 00E. NODE=M300B3;LINKAGE=AN

$f_3(2050)$ $I^G(J^{PC}) = 0^+(3^{++})$ NODE=M300J7

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J7
2048 ± 8	213 ± 34	ANISOVICH	00J	SPEC	2.0 $p\overline{p} \rightarrow \eta\pi^0\pi^0$	

$f_0(2060)$ $I^G(J^{PC}) = 0^+(0^{++})$ NODE=M300J59

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J59
~ 2050	~ 120	[33] OAKDEN	94	RVUE	0.36–1.55 $\overline{p}p \rightarrow \pi\pi$	
~ 2060	~ 50	[33] OAKDEN	94	RVUE	0.36–1.55 $\overline{p}p \rightarrow \pi\pi$	OCCUR=2

[33] See SEMENOV 99 and KLOET 96. NODE=M300J;LINKAGE=A

$\pi(2070)$ $I^G(J^{PC}) = 1^-(0^{-+})$ NODE=M300J91

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J91
2070 ± 35	310^{+100}_{-50}	ANISOVICH	01F	SPEC	2.0 $\overline{p}p \rightarrow 3\pi^0$, $\pi^0\eta$, $\pi^0\eta'$	

$X(2075)$ $I^G(J^{PC}) = ?^?(?^{??})$ NODE=M300J01

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J01
$2075 \pm 12 \pm 5$	$90 \pm 35 \pm 9$	[34] ABLIKIM	04J	BES2	$J/\psi \rightarrow K^- p\overline{\Lambda}$	

[34] From a fit in the region $M_{p\overline{\Lambda}} - M_p - M_\Lambda < 150$ MeV. S-wave in the $p\overline{\Lambda}$ system preferred. NODE=M300J01;LINKAGE=AB

A similar near-threshold enhancement in the $p\overline{\Lambda}$ system is observed in $B^+ \rightarrow p\overline{\Lambda}\overline{D}^0$ by CHEN 11F.

$X(2080)$ $I^G(J^{PC}) = ?^?(?^{??})$ NODE=M300J35

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J35
2080 ± 10	110 ± 20	KREYMER	80	STRC	13 $\pi^- d \rightarrow p\overline{p}n(n_s)$	

$X(2080)$ $I^G(J^{PC}) = ?^?(3^{-?})$ NODE=M300J37

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J37
2080 ± 10	190 ± 15	ROZANSKA	80	SPRK	18 $\pi^- p \rightarrow p\overline{p}n$	

$a_1(2095)$ $I^G(J^{PC}) = 1^-(1^{++})$ NODE=M300J04

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT	NODE=M300J04
$2096 \pm 17 \pm 121$	$451 \pm 41 \pm 81$	69k	KUHN	04	B852	18 $\pi^- p \rightarrow \eta\pi^+\pi^-\pi^- p$	

B($a_1(2095) \to f_1(1285)\pi$) / B($a_1(2095) \to a_1(1260)$) NODE=M300B03

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
3.18±0.64	69k	KUHN	04	B852	18 $\pi^- p \to \eta\pi^+\pi^-\pi^- p$

NODE=M300B03

$\eta(2100)$ $I^G(J^{PC}) = 0^+(0^{-+})$ NODE=M300J48

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
2103±50	187 ± 75	586	[35] BISELLO	89B	DM2	$J/\psi \to 4\pi\gamma$

NODE=M300J48

[35] ASTON 81B sees no peak, has 850 events in Ajinenko+Barth bins. ARESTOV 80 sees no peak. NODE=M300J;LINKAGE=A1

$X(2100)$ $I^G(J^{PC}) = ?^?(0^{??})$ NODE=M300J49

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2100±40	250 ± 40	ALDE	86D	GAM4	100 $\pi^- p \to 2\eta X$

NODE=M300J49

$X(2110)$ $I^G(J^{PC}) = 1^+(3^{-?})$ NODE=M300J36

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2110±10	330 ± 20	EVANGELIS...	79	OMEG	10,16 $\pi^- p \to \bar{p}pn$

NODE=M300J36

$f_2(2140)$ $I^G(J^{PC}) = 0^+(2^{++})$ NODE=M300J50

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
2141±12	49 ± 28	389	GREEN	86	MPSF	400 pA $\to 4K X$

NODE=M300J50

$X(2150)$ $I^G(J^{PC}) = ?^?(2^{+?})$ NODE=M300J38

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2150±10	260 ± 10	ROZANSKA	80	SPRK	18 $\pi^- p \to p\bar{p}n$

NODE=M300J38

$a_2(2175)$ $I^G(J^{PC}) = 1^-(2^{++})$ NODE=M300J88

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2175±40	310^{+90}_{-45}	ANISOVICH	01F	SPEC	2.0 $\bar{p}p \to 3\pi^0$, $\pi^0\eta$, $\pi^0\eta'$

NODE=M300J88

$\eta(2190)$ $I^G(J^{PC}) = 0^+(0^{-+})$ NODE=M300J13

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2190±50	850 ± 100	BUGG	99	BES

NODE=M300J13

$\omega_2(2195)$ $I^G(J^{PC}) = 0^-(2^{--})$ NODE=M300J82

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2195±30	225 ± 40	[36] ANISOVICH	02B	SPEC	0.6–1.9 $p\bar{p} \to \omega\eta$, $\omega\pi^0\pi^0$

NODE=M300J82

[36] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J82;LINKAGE=AZ

$\omega(2205)$ $I^G(J^{PC}) = 0^-(1^{--})$ NODE=M300J80

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2205±30	350 ± 90	[37] ANISOVICH	02B	SPEC	0.6–1.9 $p\bar{p} \to \omega\eta$, $\omega\pi^0\pi^0$

NODE=M300J80

[37] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J80;LINKAGE=AZ

$X(2210)$ $I^G(J^{PC}) = ?^?(?^{??})$ NODE=M300J39

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2210^{+79}_{-21}	203^{+437}_{-87}	EVANGELIS...	79B	OMEG	10 $\pi^- p \to K^+ K^- n$

NODE=M300J39

$X(2210)$ $I^G(J^{PC}) = ?^?(?^{??})$ NODE=M300J51

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2207±22	130	CASO	70	HBC	11.2 $\pi^- p$

NODE=M300J51

$h_1(2215)$ $I^G(J^{PC}) = 0^-(1^{+-})$ NODE=M300J27

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2215±40	325 ± 55	[38] ANISOVICH	02B	SPEC	0.6–1.9 $p\bar{p} \to \omega\eta$, $\omega\pi^0\pi^0$

NODE=M300J27

[38] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J27;LINKAGE=AZ

$\rho_2(2225)$ $I^G(J^{PC}) = 1^+(2^{--})$ NODE=M300J70 NODE=M300J70

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2225 ± 35	335^{+100}_{-50}	[39] ANISOVICH	02	SPEC	0.6–1.9 $p\overline{p} \to \omega\pi^0$, $\omega\eta\pi^0$, $\pi^+\pi^-$

[39] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300J70;LINKAGE=AY

$\rho_4(2230)$ $I^G(J^{PC}) = 1^+(4^{--})$ NODE=M300J74 NODE=M300J74

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2230 ± 25	210 ± 30	[40] ANISOVICH	02	SPEC	0.6–1.9 $p\overline{p} \to \omega\pi^0$, $\omega\eta\pi^0$, $\pi^+\pi^-$

[40] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300J74;LINKAGE=AY

$b_1(2240)$ $I^G(J^{PC}) = 1^+(1^{+-})$ NODE=M300J87 NODE=M300J87

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2240 ± 35	320 ± 85	[41] ANISOVICH	02	SPEC	0.6–1.9 $p\overline{p} \to \omega\pi^0$, $\omega\eta\pi^0$, $\pi^+\pi^-$

[41] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300J87;LINKAGE=AY

$f_2(2240)$ $I^G(J^{PC}) = 0^+(2^{++})$ NODE=M300K26 NODE=M300K26

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2240 ± 15	**241 ± 30**	[42] ANISOVICH	00J	SPEC	1.92–2.41 $p\overline{p}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
~ 2226	~ 226	HASAN	94	RVUE	$p\overline{p} \to \pi\pi$

[42] From the combined analysis of ANISOVICH 99C, ANISOVICH 99F, ANISOVICH 99J, ANISOVICH 99K, and ANISOVICH 00B. See also ANISOVICH 12. NODE=M300K26;LINKAGE=AN

$b_3(2245)$ $I^G(J^{PC}) = 1^+(3^{+-})$ NODE=M300K10 NODE=M300K10

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2245 ± 50	320 ± 70	[43] BUGG	04C	RVUE

[43] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300K10;LINKAGE=AY

$\eta_2(2250)$ $I^G(J^{PC}) = 0^+(2^{-+})$ NODE=M300J17 NODE=M300J17

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2248 ± 20	280 ± 20	ANISOVICH	00I	SPEC
2267 ± 14	290 ± 50	ANISOVICH	00J	SPEC

$\pi_4(2250)$ $I^G(J^{PC}) = 1^-(4^{-+})$ NODE=M300J73 NODE=M300J73

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2250 ± 15	215 ± 25	ANISOVICH	01F	SPEC	2.0 $\overline{p}p \to 3\pi^0$, $\pi^0\eta$, $\pi^0\eta'$

$\omega_4(2250)$ $I^G(J^{PC}) = 0^-(4^{--})$ NODE=M300J84 NODE=M300J84

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2250 ± 30	150 ± 50	[44] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta$, $\omega\pi^0\pi^0$

[44] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J84;LINKAGE=AZ

$\omega_5(2250)$ $I^G(J^{PC}) = 0^-(5^{--})$ NODE=M300K11 NODE=M300K11

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2250 ± 70	320 ± 95	[45] BUGG	04	RVUE

[45] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300;LINKAGE=AZ

$\omega_3(2255)$ $I^G(J^{PC}) = 0^-(3^{--})$ NODE=M300J66

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J66
2255±15	175 ± 30	[46] ANISOVICH	02B	SPEC	0.6–1.9 $p\bar{p} \to \omega\eta$, $\omega\pi^0\pi^0$	

[46] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J66;LINKAGE=AZ

$a_4(2255)$ $I^G(J^{PC}) = 1^-(4^{++})$ NODE=M300K21

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300K21
2237± 5 OUR AVERAGE						
2237± 5	291 ± 12	UMAN	06	E835	5.2 $\bar{p}p \to \eta\eta\pi^0$	
2255±40	330^{+110}_{-50}	[47] ANISOVICH	01F	SPEC	1.96–2.41 $\bar{p}p$	

[47] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, and ANISOVICH 01F. NODE=M300K21;LINKAGE=AN

$a_2(2255)$ $I^G(J^{PC}) = 1^-(2^{++})$ NODE=M300K22

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300K22
2255±20	230 ± 15	[48] ANISOVICH	01G	SPEC	1.96–2.41 $\bar{p}p$	

[48] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, ANISOVICH 01F, and ANISOVICH 01G. NODE=M300K22;LINKAGE=AN

$X(2260)$ $I^G(J^{PC}) = 0^+(4^{+?})$ NODE=M300J40

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J40
2260±20	400 ± 100	EVANGELIS...	79	OMEG	10,16 $\pi^- p \to \bar{p}pn$	

$\rho(2270)$ $I^G(J^{PC}) = 1^+(1^{--})$ NODE=M300J86

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J86
2265±40	325 ± 80	[49] ANISOVICH	02	SPEC	0.6–1.9 $p\bar{p} \to \omega\pi^0$, $\omega\eta\pi^0$, $\pi^+\pi^-$	
2280±50	440 ± 110	ATKINSON	85	OMEG	20–70 $\gamma p \to p\omega\pi^+\pi^-\pi^0$	

[49] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300J86;LINKAGE=AY

$a_1(2270)$ $I^G(J^{PC}) = 1^-(1^{++})$ NODE=M300J72

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J72
2270^{+55}_{-40}	305^{+70}_{-40}	ANISOVICH	01F	SPEC	2.0 $\bar{p}p \to 3\pi^0$, $\pi^0\eta$, $\pi^0\eta'$	

$h_3(2275)$ $I^G(J^{PC}) = 0^-(3^{+-})$ NODE=M300J28

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J28
2275±25	190 ± 45	[50] ANISOVICH	02B	SPEC	0.6–1.9 $p\bar{p} \to \omega\eta$, $\omega\pi^0\pi^0$	

[50] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J28;LINKAGE=AZ

$a_3(2275)$ $I^G(J^{PC}) = 1^-(3^{++})$ NODE=M300K19

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300K19
2275±35	350^{+100}_{-50}	[51] ANISOVICH	01G	SPEC	1.96–2.41 $\bar{p}p$	

[51] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, ANISOVICH 01F, and ANISOVICH 01G. NODE=M300K19;LINKAGE=AN

$\pi_2(2285)$ $I^G(J^{PC}) = 1^-(2^{-+})$ NODE=M300K25

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300K25
2285±20±25	**250 ± 20 ± 25**	[52] ANISOVICH	11	SPEC	0.9–1.94 $p\bar{p}$	

[52] Reanalysis of ADOMEIT 96 and ANISOVICH 00E. NODE=M300K25;LINKAGE=AN

$\omega_3(2285)$ $I^G(J^{PC}) = 0^-(3^{--})$ NODE=M300J83

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE=M300J83
2278±28	224 ± 50	[53] BUGG	04A	RVUE		
2285±60	230 ± 40	[54] ANISOVICH	02B	SPEC	0.6–1.9 $p\bar{p} \to \omega\eta$, $\omega\pi^0\pi^0$	

[53] Partial wave analysis of the data on $p\overline{p} \to \overline{\Lambda}\Lambda$ from BARNES 00. NODE=M300J83;LINKAGE=BU
[54] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J83;LINKAGE=AZ

$\omega(2290)$ $I^G(J^{PC}) = 0^-(1^{--})$ NODE=M300J02

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	NODE
2290±20	275 ± 35	[55] BUGG	04A	RVUE	NODE=M300J02

[55] Partial wave analysis of the data on $p\overline{p} \to \overline{\Lambda}\Lambda$ from BARNES 00. NODE=M300J02;LINKAGE=BU

$f_2(2295)$ $I^G(J^{PC}) = 0^+(2^{++})$ NODE=M300K27

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE
2293±13	**216 ± 37**	[56] ANISOVICH	00J	SPEC	1.92–2.41 $p\overline{p}$	NODE=M300K27

[56] From the combined analysis of ANISOVICH 99C, ANISOVICH 99F, ANISOVICH 99J, ANISOVICH 99K, and ANISOVICH 00B. See also ANISOVICH 12. NODE=M300K27;LINKAGE=AN

$f_3(2300)$ $I^G(J^{PC}) = 0^+(3^{++})$ NODE=M300J19

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	NODE
2334±25	200 ± 20	[57] BUGG	04A	RVUE	NODE=M300J19

[57] Partial wave analysis of the data on $p\overline{p} \to \overline{\Lambda}\Lambda$ from BARNES 00. NODE=M300J19;LINKAGE=BU

$f_1(2310)$ $I^G(J^{PC}) = 0^+(1^{++})$ NODE=M300J23

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	NODE
2310±60	255 ± 70	ANISOVICH	00J	SPEC	NODE=M300J23

$\eta(2320)$ $I^G(J^{PC}) = 0^+(0^{-+})$ NODE=M300J18

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	NODE
2320±15	230 ± 35	[58] ANISOVICH	00M	SPEC	NODE=M300J18

[58] From the combined analysis of $\overline{p}p \to \eta\eta\eta$ from ANISOVICH 00M and $\overline{p}p \to \eta\pi^0\pi^0$ from ANISOVICH 00J. NODE=M300;LINKAGE=B

$\eta_4(2330)$ $I^G(J^{PC}) = 0^+(4^{-+})$ NODE=M300J22

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE
2328±38	240 ± 90	ANISOVICH	00J	SPEC	2.0 $p\overline{p} \to \eta\pi^0\pi^0$	NODE=M300J22

$\omega(2330)$ $I^G(J^{PC}) = 0^-(1^{--})$ NODE=M300J53

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE
2330±30	435 ± 75	ATKINSON	88	OMEG	25–50 $\gamma p \to \rho^{\pm}\rho^0\pi^{\mp}$	NODE=M300J53

$X(2340)$ $I^G(J^{PC}) = ?^?(?^{??})$ NODE=M300J54

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT	NODE
2340±20	180 ± 60	126	[59] BALTAY	75	HBC	15 $\pi^+ p \to p5\pi$	NODE=M300J54

[59] Dominant decay into $\rho^0\rho^0\pi^+$. BALTAY 78 finds confirmation in $2\pi^+\pi^-2\pi^0$ events which contain $\rho^+\rho^0\pi^0$ and $2\rho^+\pi^-$. NODE=M300J;LINKAGE=B1

$\pi(2360)$ $I^G(J^{PC}) = 1^-(0^{-+})$ NODE=M300J90

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE
2360±25	300^{+100}_{-50}	ANISOVICH	01F	SPEC	2.0 $\overline{p}p \to 3\pi^0$, $\pi^0\eta$, $\pi^0\eta'$	NODE=M300J90

$X(2360)$ $I^G(J^{PC}) = ?^?(4^{+?})$ NODE=M300J42

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE
2360±10	430 ± 30	ROZANSKA	80	SPRK	18 $\pi^- p \to p\overline{p}n$	NODE=M300J42

$X(2440)$ $I^G(J^{PC}) = ?^?(5^{-?})$ NODE=M300J43

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT	NODE
2440±10	310 ± 20	ROZANSKA	80	SPRK	18 $\pi^- p \to p\overline{p}n$	NODE=M300J43

$X(2632)$ $I^G(J^{PC}) = ?^?(?^{??})$ NODE=M300J03 NODE=M300J03

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2635.2 ± 3.3		[60] EVDOKIMOV	04	SELX	$X(2632) \rightarrow D_s^+ \eta$
2631.6 ± 2.1	< 17	[61] EVDOKIMOV	04	SELX	$X(2632) \rightarrow D^0 K^+$ OCCUR=2

[60] From a mass difference to D_s^+ of 666.9 ± 3.3 MeV. NODE=M300J03;LINKAGE=EV

[61] From a mass difference to D^0 of 767.0 ± 2.0 MeV. NODE=M300J03;LINKAGE=ED

$B(X(2632) \rightarrow D^0 K^+)/B(X(2632) \rightarrow D_s^+ \eta)$ NODE=M300B01 NODE=M300B01

VALUE	DOCUMENT ID		TECN
0.14 ± 0.06	[62] EVDOKIMOV	04	SELX

[62] Possible interpretation of this decay pattern is discussed by YASUI 07. NODE=M300B01;LINKAGE=YA

$X(2680)$ $I^G(J^{PC}) = ?^?(?^{??})$ NODE=M300J55 NODE=M300J55

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2676 ± 27	150	CASO	70	HBC	$11.2\ \pi^- p \rightarrow \rho^- \pi^+ \pi^- p$

$X(2710)$ $I^G(J^{PC}) = ?^?(6^{+?})$ NODE=M300J44 NODE=M300J44

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2710 ± 20	170 ± 40	ROZANSKA	80	SPRK	$18\ \pi^- p \rightarrow p \bar{p} n$

$X(2750)$ $I^G(J^{PC}) = ?^?(7^{-?})$ NODE=M300J56 NODE=M300J56

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2747 ± 32	195 ± 75	DENNEY	83	LASS	$10\ \pi^+ p \rightarrow K^+ K^- \pi^+ p$

$f_6(3100)$ $I^G(J^{PC}) = 0^+(6^{++})$ NODE=M300J06 NODE=M300J06

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
3100 ± 100	700 ± 130	BINON	05	GAMS	$33\ \pi^- p \rightarrow \eta \eta n$

$X(3250)$ $I^G(J^{PC}) = ?^?(?^{??})$ 3-Body Decays NODE=M300J57 NODE=M300J57

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$3250 \pm 8 \pm 20$	45 ± 18	ALEEV	93	BIS2	$X(3250) \rightarrow \Lambda \bar{p} K^+$
$3265 \pm 7 \pm 20$	40 ± 18	ALEEV	93	BIS2	$X(3250) \rightarrow \bar{\Lambda} p K^-$ OCCUR=2

$X(3250)$ $I^G(J^{PC}) = ?^?(?^{??})$ 4-Body Decays NODE=M300J58 NODE=M300J58

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$3245 \pm 8 \pm 20$	25 ± 11	ALEEV	93	BIS2	$X(3250) \rightarrow \Lambda \bar{p} K^+ \pi^\pm$
$3250 \pm 9 \pm 20$	50 ± 20	ALEEV	93	BIS2	$X(3250) \rightarrow \bar{\Lambda} p K^- \pi^\mp$ OCCUR=2
$3270 \pm 8 \pm 20$	25 ± 11	ALEEV	93	BIS2	$X(3250) \rightarrow K_S^0 p \bar{p} K^\pm$ OCCUR=3

$X(3350)$ $I^G(J^{PC}) = ?^?(?^{??})$ NODE=M300J09 NODE=M300J09

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$3350^{+10}_{-20} \pm 20$	$70^{+40}_{-30} \pm 40$	50 ± 10	[63] GABYSHEV	06A	BELL	$B^- \rightarrow \Lambda_c^+ \bar{p} \pi^-$

[63] A similar enhancement in the $\Lambda_c^+ \bar{p}$ final state is also reported by BABAR collaboration in AUBERT 10H. NODE=M300J09;LINKAGE=AU

REFERENCES for Further States

NODE=M300

ANISOVICH	12	PR D85 014001	A.V. Anisovich *et al.*	REFID=53961
ANASHIN	11	PL B703 543	V.V. Anashin *et al.*	(KEDR Collab.) REFID=53932
ANISOVICH	11	EPJ C71 1511	A.V. Anisovich *et al.*	(LOQM, RAL, PNPI) REFID=53631
CHEN	11F	PR D84 071501	P. Chen *et al.*	(BELLE Collab.) REFID=53814
AUBERT	10H	PR D82 031102R	B. AUBERT *et al.*	(BABAR Collab.) REFID=53363
ABRAAMYAN	09	PR C80 034001	Kh.U. Abraamyan *et al.*	REFID=53100
LIU	09	PR D79 071102R	C. Liu *et al.*	(BELLE Collab.) REFID=52752
VLADIMIRSK...	08	PAN 71 2129	V.V. Vladimirsky *et al.*	(ITEP) REFID=52681
		Translated from YAF 71 2166.		
VLADIMIRSK...	07	PAN 70 1706	V. Vladimirsky *et al.*	REFID=52058
		Translated from YAF 70 1751.		

YASUI	07	PR D76 034009	S. Yasui, M. Oka		REFID=51907
ABLIKIM	06J	PRL 96 162002	M. Ablikim *et al.*	(BES Collab.)	REFID=51127
ABLIKIM	06S	PRL 97 142002	M. Ablikim *et al.*	(BES Collab.)	REFID=51451
GABYSHEV	06A	PRL 97 242001	N. Gabyshev *et al.*	(BELLE Collab.)	REFID=51565
SCHEGELSKY	06	EPJ A27 199	V.A. Schegelsky *et al.*		REFID=51186
SCHEGELSKY	06A	EPJ A27 207	V.A. Schegelsky *et al.*		REFID=51185
UMAN	06	PR D73 052009	I. Uman *et al.*	(FNAL E835)	REFID=51063
VLADIMIRSK...	06	PAN 69 493	V.V. Vladimirsky *et al.*	(ITEP, Moscow)	REFID=51191
		Translated from YAF 69 515.			
BINON	05	PAN 68 960	F. Binon *et al.*		REFID=50780
		Translated from YAF 68 998.			
GRIGOR'EV	05	PAN 68 1271	V.K. Grigor'ev *et al.*	(ITEP)	REFID=50844
		Translated from YAF 68 1324.			
LU	05	PRL 94 032002	M. Lu *et al.*	(BNL E852 Collab.)	REFID=50459
ABLIKIM	04J	PRL 93 112002	M. Ablikim *et al.*	(BES Collab.)	REFID=50196
BUGG	04	PL B595 556 (erratum)	D.V. Bugg		REFID=49763
BUGG	04A	EPJ C36 161	D.V. Bugg		REFID=50158
BUGG	04C	PRPL 397 257	D.V. Bugg		REFID=50203
EVDOKIMOV	04	PRL 93 242001	A.V. Evdokimov *et al.*	(SELEX Collab.)	REFID=50337
KUHN	04	PL B595 109	J. Kuhn *et al.*	(BNL E852 Collab.)	REFID=49773
ANISOVICH	03	EPJ A16 229	V.V. Anisovich *et al.*		REFID=49401
VLADIMIRSK...	03	PAN 66 700	V.V. Vladimirsky *et al.*		REFID=49419
		Translated from YAF 66 729.			
ANISOVICH	02	PL B542 8	A.V. Anisovich *et al.*		REFID=48828
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CHUNG	02	PR D65 072001	S.U. Chung *et al.*	(BNL E852 Collab.)	REFID=48837
LINK	02K	PL B545 50	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=48845
ANISOVICH	01C	PL B507 23	A.V. Anisovich *et al.*		REFID=48325
ANISOVICH	01D	PL B508 6	A.V. Anisovich *et al.*		REFID=48327
ANISOVICH	01E	PL B513 281	A.V. Anisovich *et al.*		REFID=48349
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ANISOVICH	01G	PL B517 273	A.V. Anisovich *et al.*		REFID=48353
ANISOVICH	00B	NP A662 319	A.V. Anisovich *et al.*		REFID=47942
ANISOVICH	00D	PL B476 15	A.V. Anisovich *et al.*		REFID=47944
ANISOVICH	00E	PL B477 19	A.V. Anisovich *et al.*		REFID=47945
ANISOVICH	00I	PL B491 40	A.V. Anisovich *et al.*		REFID=47949
ANISOVICH	00J	PL B491 47	A.V. Anisovich *et al.*		REFID=47950
ANISOVICH	00M	PL B496 145	A.V. Anisovich *et al.*		REFID=48009
BARNES	00	PR C62 055203	P.D. Barnes *et al.*		REFID=47965
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ANISOVICH	99F	NP A651 253	A.V. Anisovich *et al.*		REFID=46926
ANISOVICH	99J	PL B471 271	A.V. Anisovich *et al.*		REFID=47416
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KLOET	96	PR D53 6120	W.M. Kloet, F. Myhrer	(RUTG, NORD)	REFID=45212
PROKOSHKIN	96	SPD 41 247	Y.D. Prokoshkin, V.D. Samoilenko	(SERP)	REFID=45182
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OAKDEN	94	NP A574 731	M.N. Oakden, M.R. Pennington	(DURH)	REFID=45210
ALEEV	93	PAN 56 1358	A.N. Aleev *et al.*	(BIS-2 Collab.)	REFID=43668
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ARMSTRONG	93D	PL B307 399	T.A. Armstrong *et al.*	(FNAL, FERR, GENO+)	REFID=43596
ALBRECHT	91F	ZPHY C50 1	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41658
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ATKINSON	88	ZPHY C38 535	M. Atkinson *et al.*	(BONN, CERN, GLAS+)	REFID=40556
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ALDE	86D	NP B269 485	D.M. Alde *et al.*	(BELG, LAPP, SERP, CERN+)	REFID=20765
BRIDGES	86D	PL B180 313	D.L. Bridges *et al.*	(SYRA, BNL, CASE+)	REFID=21984
GREEN	86	PRL 56 1639	D.R. Green *et al.*	(FNAL, ARIZ, FSU+)	REFID=21872
ATKINSON	85	ZPHY C29 333	M. Atkinson *et al.*	(BONN, CERN, GLAS+)	REFID=22000
DENNEY	83	PR D28 2726	D.L. Denney *et al.*	(IOWA, MICH)	REFID=20754
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KALELKAR	75	Thesis Nevis 207	M.S. Kalelkar	(COLU)	REFID=21564
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