

A great deal of early information can be found in the first edition of the Particle Data Book [1] published in 1964, and the subsequent version [2] published in 1965.

- The  $S(975)$  or the  $S^*$  is now known as the  $f_0(980)$ . The  $S^*$  was reported in 1966 [3]. The state was first reported in the reaction  $\pi^+p \rightarrow \Delta^{++}\pi^+\pi^-$  and  $\pi^+p \rightarrow \Delta^{++}K^+K^-$  in 1973 [4].
- The  $\delta(980)$  is now known as the  $a_0(980)$ . The state was first reported in  $\bar{p}p \rightarrow K_S K^\pm \pi^\mp$  at rest, where the analysis focused on events without  $K^*(890)$  in 1965 [5].
- The  $H(1190)$  is now known as the  $h_1(1170)$ . The state was first observed in  $\pi^-p \rightarrow \pi^+\pi^-\pi^0n$  in 1981 [6].
- The  $B(1235)$  is now known as the  $b_1(1235)$ . The state was first observed in an analysis of reactions of the type  $\pi^+p \rightarrow pX$  in 1963. [7]
- The  $f(1270)$  is now known as the  $f_2(1270)$ . The state was first observed in  $\pi^-p \rightarrow n\pi^+\pi^-$  in 1963 [8].
- The  $A(1270)$  or the  $A_1$  is now known as the  $a_1(1260)$ . An enhancement in the region of the  $a_1$  mass was first observed in  $\pi^-$  interactions on carbon. The authors separated their data into classes of events based on the number of pions. The so-called  $A$  region contained  $\pi^+\pi^-\pi^-$  events and a broad enhancement was seen [9]. The  $A$  name stuck for mesons in this mass region. In subsequent work [10, 11], two states were resolved: the  $A_1$  and  $A_2$ .
- The  $D(1285)$  is now known as the  $f_1(1285)$ . The state was first reported in  $\pi^-p$  interactions in three or more-body final states. It was first reported in 1967 [12]
- The  $\epsilon(1300)$  is now known as the  $f_0(1370)$ . The state was first reported in  $\bar{p}n \rightarrow \pi^+\pi^+\pi^-\pi^-\pi^-$  annihilation at rest as an enhancement in  $\rho\rho$ . It was first reported in 1966 [13].
- The  $A_2(1320)$  is now known as the  $a_2(1320)$ . This appears to be first reported in  $\pi p$  interactions, but I have been unable to track down the earliest reference. It was originally discussed as part of the  $A$  which ultimately included both the  $A_1$  and  $A_2$  [9, 10, 11].
- The  $E(1420)$  is now known as the  $f_1(1420)$ . The  $E(1420)$  and the  $\iota(1440)$  have a bit of a confused history. A state called the  $E$  with  $J^{PC} = 0^{-+}$  was first reported in  $\bar{p}p \rightarrow K\bar{K}3\pi$  in the  $K\bar{K}\pi$  invariant mass [14]. The  $E$  was first reported in  $J^{PC} = 0^{-+}$  was reported in radiative  $J/\psi$  decays in  $K\bar{K}\pi$  [15]. A  $J^{PC} = 1^{++}$  state was later observed in  $\pi p$  interactions [16] and by 1984, the  $E$  was assigned  $J^{PC} = 1^{++}$  quantum numbers and the  $\iota$  was assigned  $J^{PC} = 0^{-+}$  quantum numbers. Hence, older literature will likely be very confused on these two states. The pseudoscalar states are produced strongly in both radiative  $J/\psi$  decays and proton antiproton annihilation at rest. The axial state is produced in central production, photoproduction and  $\pi p$  interactions.
- The  $\iota(1440)$  is now two states, the  $\eta(1405)$  and the  $\eta(1475)$ .
- The  $f'(1525)$  is now known as the  $f'_2(1525)$ . This state was first observed in  $K^-p$  interactions in  $_S K_S$  recoiling against a hyperon. The original observation is from 1965 [17] and a spin parity analysis from 1966 [18].

- The  $\omega(1670)$  is now known as the  $\omega_3(1670)$ .
- The  $A(1680)$  or  $A_3$  is now known as the  $\pi_2(1670)$ . The state was first observed in the reaction  $\pi^\pm p \rightarrow p\pi^\pm\pi^+\pi^-$  in the three pion invariant mass [19, 20]. It was reported in a conference in 1966, but the first published observations were in 1968.
- The  $\theta(1690)$  is now known as the  $f_0(1710)$ . There was early uncertainty whether it was  $J^{PC} = 0^{++}$  or  $2^{++}$ . It is now confirmed as  $0^{++}$ . The state was reported in  $\pi^- p \rightarrow K_S K_S n$  [21, 22], where it was identified as  $J^{PC} = 0^{++}$  and called the  $S^*$ . In radiative  $J/\psi$  decays,  $J/\psi \rightarrow \gamma\eta\eta$ , a state identified as  $J^{PC} = 2^{++}$  and called the  $\theta$  [23] was reported. Finally, an enhancement below 2 GeV was reported in  $J/\psi \rightarrow \rho^0\rho^0$  [24]. All of these observations were reported in 1982.
- The  $\phi(1850)$  is now known as the  $\phi_3(1850)$ .
- The  $h(2030)$  is now known as the  $f_4(2050)$ . This state was observed in  $\pi^- p \rightarrow n\pi^0\pi^0$  and reported as the  $h$  meson [25]. It was also reported in  $\pi^- p \rightarrow nK^+K^-$  and also reported as the  $h$  [26]. Both of these observations are from 1975.
- The  $Q(1280)$  or  $Q_1$  is now known as the  $K_1(1270)$ .
- The  $\kappa(1350)$  is now known as the  $K_0^*(1430)$ .
- The  $Q(1400)$  or  $Q_2$  is now known as the  $K_1(1400)$ .
- The  $K^*(1430)$  is now known as the  $K_2^*(1430)$ .
- The  $L(1770)$  is now known as the  $K_2(1770)$ .
- The  $K^*(1780)$  or  $K^*$  is now known as the  $K_3^*(1780)$ .
- The  $K^*(2060)$  is now known as the  $K_4^*(2045)$ .

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