Ω BARYONS ($S=-3, I=0$)

$\Omega^- = sss$

Ω^-

$I(J^P) = 0(\frac{3}{2}^+)$

J^P is not yet measured; $\frac{3}{2}^+$ is the quark model prediction.

Mass $m = 1672.45 \pm 0.29$ MeV
Mean life $\tau = (0.822 \pm 0.012) \times 10^{-10}$ s
$c\tau = 2.46$ cm
Magnetic moment $\mu = -1.94 \pm 0.22\ \mu_N$

Decay parameters

ΛK^-	$\alpha = -0.026 \pm 0.026$
$\Xi^0\pi^-$	$\alpha = 0.09 \pm 0.14$
$\Xi^-\pi^0$	$\alpha = 0.05 \pm 0.21$

Ω^- DECAY MODES	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)
ΛK^-	(67.8±0.7) %		211
$\Xi^0\pi^-$	(23.6±0.7) %		294
$\Xi^-\pi^0$	(8.6±0.4) %		290
$\Xi^-\pi^+\pi^-$	$(\ 4.3^{+3.4}_{-1.3}) \times 10^{-4}$		190
$\Xi(1530)^0\pi^-$	$(\ 6.4^{+5.1}_{-2.0}) \times 10^{-4}$		17
$\Xi^0 e^-\overline{\nu}_e$	$(\ 5.6\pm2.8) \times 10^{-3}$		319
$\Xi^-\gamma$	$< 2.2 \times 10^{-3}$	90%	314
$\Delta S = 2$ forbidden ($S2$) modes			
$\Lambda\pi^-$	$S2$ $< 1.9 \times 10^{-4}$	90%	449

$\Omega(2250)^-$

$I(J^P) = 0(?^?)$

Mass $m = 2252 \pm 9$ MeV
Full width $\Gamma = 55 \pm 18$ MeV

$\Omega(2250)^-$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi^-\pi^+K^-$	seen	531
$\Xi(1530)^0K^-$	seen	437

CHARMED BARYONS ($C=+1$)

$\Lambda_c^+ = udc$, $\Sigma_c^{++} = uuc$, $\Sigma_c^+ = udc$, $\Sigma_c^0 = ddc$,
$\Xi_c^+ = usc$, $\Xi_c^0 = dsc$, $\Omega_c^0 = ssc$

Λ_c^+

$I(J^P) = 0(\frac{1}{2}^+)$

J not confirmed; $\frac{1}{2}$ is the quark model prediction.

Mass $m = 2285.1 \pm 0.6$ MeV
Mean life $\tau = (0.200^{+0.011}_{-0.010}) \times 10^{-12}$ s
$c\tau = 60.0\ \mu$m

Decay asymmetry parameters

$\Lambda\pi^+$	$\alpha = -1.03 \pm 0.29$
$\Lambda e^+\nu_e$	$\alpha = -0.89^{+0.19}_{-0.12}$

Λ_c^+ DECAY MODES	Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
Hadronic modes with a p and one K			
$p\overline{K}^0$	(2.1± 0.4) %		872
$pK^-\pi^+$	(4.4± 0.6) %		822
$p\overline{K}^*(892)^0$	[k] (1.6± 0.4) %		681
$\Delta(1232)^{++}K^-$	(7 ± 4) × 10^{-3}		709
$\Lambda(1520)\pi^+$	[k] $(\ 3.9^{+2.0}_{-1.7}) \times 10^{-3}$		626
$pK^-\pi^+$ nonresonant	$(\ 2.4^{+0.5}_{-0.6})$ %		822
$p\overline{K}^0\pi^+\pi^-$	(2.4± 0.8) %	S=1.3	753
$pK^-\pi^+\pi^0$	seen		758
$pK^*(892)^-\pi^+$	seen		579
$p(K^-\pi^+)_{\text{nonresonant}}\pi^0$	(3.2± 0.7) %		758
$\Delta(1232)\overline{K}^*(892)$	seen		417
$pK^-\pi^+\pi^+\pi^-$	(10 ± 7) × 10^{-4}		670
$pK^-\pi^+\pi^0\pi^0$	(7.0± 3.5) × 10^{-3}		676
$pK^-\pi^+\pi^0\pi^0\pi^0$	(4.4± 2.8) × 10^{-3}		573
Hadronic modes with a p and zero or two K's			
$p\pi^+\pi^-$	(3.0± 1.6) × 10^{-3}		926
$pf_0(980)$	[k] (2.4± 1.6) × 10^{-3}		621
$p\pi^+\pi^+\pi^-\pi^-$	(1.6± 1.0) × 10^{-3}		851
pK^+K^-	(3.0± 1.1) × 10^{-3}		615
$p\phi$	[k] < 1.7 × 10^{-3}	CL=90%	589
Hadronic modes with a hyperon			
$\Lambda\pi^+$	(7.9± 1.8) × 10^{-3}		863
$\Lambda\pi^+\pi^0$	(3.2± 0.9) %		843
$\Lambda\rho^0$	< 4 %	CL=95%	639
$\Lambda\pi^+\pi^+\pi^-$	(2.7± 0.6) %		806
$\Sigma^0\pi^+$	(8.7± 2.0) × 10^{-3}		824
$\Sigma^0\pi^+\pi^0$	(1.6± 0.6) %		802
$\Sigma^0\pi^+\pi^+\pi^-$	(9.2± 3.3) × 10^{-3}		762
$\Sigma^+\pi^0$	(8.7± 2.2) × 10^{-3}		826
$\Sigma^+\pi^+\pi^-$	(3.0± 0.6) %		803
$\Sigma^+\rho^0$	< 1.2 %	CL=95%	579
$\Sigma^-\pi^+\pi^+$	(1.6± 0.6) %		798
$\Sigma^+\pi^+\pi^-\pi^0$			569
$\Sigma^+\omega$	[k] (2.4± 0.7) %		569
$\Sigma^+\pi^+\pi^+\pi^-\pi^-$	$(\ 2.6^{+3.5}_{-1.8}) \times 10^{-3}$		707
$\Sigma^+K^+K^-$	(3.1± 0.8) × 10^{-3}		346
$\Sigma^+\phi$	[k] (3.0± 1.3) × 10^{-3}		292
$\Sigma^+K^+\pi^-$	$(\ 5.7^{+5.3}_{-3.1}) \times 10^{-3}$		668
Ξ^0K^+	(3.4± 0.9) × 10^{-3}		652
$\Xi^-K^+\pi^+$	(3.8± 1.2) × 10^{-3}		564
$\Xi(1530)^0K^+$	[k] (2.3± 0.9) × 10^{-3}		471
Inclusive modes			
p anything	(50 ±16) %		–
p anything (no Λ)	(12 ±19) %		–
n anything	(50 ±16) %		–
n anything (no Λ)	(29 ±17) %		–
Λ anything	(35 ±11) %	S=1.4	–
$\Sigma^\pm$ anything	[l] (10 ± 5) %		–
e^+ anything	(4.5± 1.7) %		–
pe^+ anything	(1.8± 0.9) %		–
Λe^+ anything	(1.4± 0.5) %		–
$\Lambda\mu^+$ anything	(1.5± 0.9) %		–

$\Lambda_c(2625)^+$

$I = 0$

Mass $m = 2625.6 \pm 0.8$ MeV
$m - m_{\Lambda_c^+} = 340.6 \pm 0.6$ MeV
Full width $\Gamma < 3.2$ MeV, CL = 90%

$\Lambda_c(2625)^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+\pi^+\pi^-$	seen	182
$\Sigma_c(2455)^{++}\pi^-$ + $\Sigma_c(2455)^0\pi^+$	seen	99
$\Lambda_c^+\pi^+\pi^-$ nonresonant	seen	182

$\Sigma_c(2455)$

$I(J^P) = 1(\frac{1}{2}^+)$

J^P not confirmed; $\frac{1}{2}^+$ is the quark model prediction.

$\Sigma_c(2455)^{++}$ mass $m = 2453.1 \pm 0.6$ MeV
$\Sigma_c(2455)^+$ mass $m = 2453.8 \pm 0.9$ MeV
$\Sigma_c(2455)^0$ mass $m = 2452.4 \pm 0.7$ MeV (S = 1.1)

$\Sigma_c(2455)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+\pi$	100 %	91