Table I Retrodiction Tests of the SSCM

Test #	Test Parameter	Reference Parameter	Reference Value	Scale Factor	SSCP Prediction	Observed Value
1	M dwarf abundance	H abundance	$90 \pm 2\%$	-	$< \approx 90\% >$	$< \approx 89\% >$
2	K dwarf abundance	He abundance	$9 \pm 2\%$	-	$< \approx 9\% >$	$< \approx 10\% >$
3	Lower limit R M dwarfs	Lower limit R for H	1.6×10^{-8} cm	Λ	8.3×10^{9} cm	8.7×10^{9} cm
4	<R> for white dwarfs	R for He^{+}	2.1×10^{-9} cm	Λ	1.1×10^{9}	0.9×10^{9}
5	Lower limit R for white dwarfs	Lower limit R for atomic ions	4.2×10^{-10} to 1.2×10^{-9} cm	Λ	2.2×10^{8} to 6.1×10^{8} cm	5.5×10^{8} cm
6	Range of R for Main Seq. Stars	Range of R for neutral atoms	1.6×10^{-8} to 6.4×10^{-5} cm	Λ	8.3×10^{9} to 3.3×10^{13} cm	8.7×10^{9} to 3.4×10^{13} cm
7	Average M for white dwarfs	Mass of ^{4}He	6.7×10^{-24} g	Λ^{D}	1.14×10^{33} g	1.15×10^{33} g
8	Lower M for white dwarfs	$^{3}He/^{4}He$ M ratio	0.75	-	8.7×10^{32} g	8.8×10^{32} g
9	Proton radius	Schwarschild R of black hole	Stellar Scale G	$\Lambda^{D}\Lambda^{2}/\Lambda^{3}$	0.81×10^{-13} cm	0.8×10^{-13} cm
10	Log K_S/K_A from $J=K_iM^2$	-	-	$\Lambda^{2}/\Lambda^{D+1}$	-38.51	-38.41
11	Log Δ_S/Δ_A from $\mu=\Delta J$	-	-	$\Lambda^{0.5}/\Lambda^{1.59}$	-19.31	-20.36
12	Typical pulsar spin period	Typical nuclear spin period	5×10^{-20} sec	Λ	0.03 sec	0.002 – 3.0 sec
13	R range for	R range for	0.8×10^{-13}		2.2×10^{22}	0.9×10^{22}

	galaxies	atomic nuclei	to 8.3×10^{-13} cm	Λ^2	to 2.2×10^{23} cm	to 3.1×10^{23} cm
14	Typical galaxy spin period	Typical nuclear spin period	5×10^{-20} sec	Λ^2	4.3×10^{8} years	4.4×10^{8} years
15	μ range for neutron stars	μ range for atomic nuclei	4.5×10^{-25} to 1.8×10^{-23} G cm^3	$\Lambda^{1.59}$ times $\Lambda^{1.5}$	$10^{30.34}$ to $10^{31.94}$ G cm^3	$10^{30.3}$ to $10^{31.3}$ G cm^3
16	Period range for He^+	Period range for white dwarfs	250-850 sec	Λ^{-1}	4.8×10^{-16} to 1.6×10^{-15} sec	5.5×10^{-16} to 1.6×10^{-15} sec
17	Period range for neutron stars	Period range for atomic nuclei	1.3×10^{-22} to 7.8×10^{-21} sec	Λ	6.8×10^{-5} to 4.1×10^{-3} sec	10.0×10^{-5} to 1.2×10^{-3} sec
18	Period-Radius Law for stars	Period-Radius Law for atoms	$p^2 = k_a r^3$	-	$P^2 = K_S R^3$	$P^2 = K_S R^3$
19	K_S values from #18	k_a values From #18	1.6×10^{-7}, 2.0×10^{-8} sec^2/cm^3	Λ^2/Λ^3	3.0×10^{-25}, 3.8×10^{-26} sec^2/cm^3	3×10^{-25}, 4×10^{-26} sec^2/cm^3
20	Period range He atoms $7 \leq n \leq 9$	Period range RR Lyrae stars	0.2 – 0.8 days	Λ^{-1}	3.3×10^{-14} to 1.3×10^{-13} sec	$\approx 5 \times 10^{-14}$ to $\approx 1 \times 10^{-13}$ sec