Full sphere:	$\frac{4\pi}{(\pi/180)^2} = \frac{4 \cdot 180^2}{\pi} \approx 41\,252.96$	squared degrees
Subaru Deep Field:	$1\,400\,107$	objects
field of view:	$30' \times 37'$	
space angle:	$\frac{30}{60} \cdot \frac{37}{60} = \frac{1110}{3600}$	squared degrees
firmament/SDF *ratio*:	$\frac{4 \cdot 180^2/\pi}{1110/3600} \approx 133\,793$	
extrapolation to entire firmament:	$1\,400\,107 \times 133\,793$	
	$= 187\,324\,515\,851$	
	$\approx 187 \times 10^9$	objects/universe
Hubble Ultra Deep Field:	$10\,040$	objects
field of view:	$2'.4 \times 2'.4$	
space angle:	$\frac{2.4}{60} \cdot \frac{2.4}{60} = \frac{5.76}{3600}$	squared degrees
firmament/HUDF *ratio*:	$\frac{4 \cdot 180^2/\pi}{5.76/3600} \approx 25\,783\,101$	
extrapolation to entire firmament:	$10\,040 \times 25\,783\,101$	
	$= 258\,862\,334\,040$	
	$\approx 259 \times 10^9$	objects/universe
Estimated entire universe:		
average of the above:	$\left(\frac{187+259}{2} = 223\right) \times 10^9$	galaxies/universe
	$\triangleq \frac{223 \times 10^9}{N_A} = \frac{223 \times 10^9}{6.022\,140\,76 \times 10^{23}}$	
	$\approx \mathbf{0.37}$	**picomol** galaxies/universe
Presumption:	100×10^9	average stars/galaxy
hence:	2.23×10^{22}	stars/universe
	$\approx \mathbf{37}$	**millimol** stars/universe

Compare:

A Dutch shot glass measures 50 milliliters. Since we shouldn't drink and derive we'll top it off with distilled water. That makes 50 grams. The molecular *mass* of H_2O is 18 amu. Therefore a topped-off Dutch shot glass contains $\frac{50\text{ g}}{18\text{ amu}} \approx 1.67 \times 10^{24}$ molecules. Division by N_A then yields ≈ 2.78 mol ≈ 75 times the no. of stars in the universe. Cheers!

Presuming the sun's *mass*, which is 1.989×10^{30} kg, to be an adequate average of all stars in the entire universe, we obtain $2.23 \times 10^{22} \cdot 1.989 \times 10^{30} \approx 4.44 \times 10^{52}$ kg. Also presuming a factor of ≈ 10 for the interstellar and intergalactic medium, the estimated *mass* of the entire universe would be $\approx 4 \times 10^{53}$ kg. Division by 1 amu yields $\approx 2 \times 10^{80}$ nucleons. During the bing bang nucleosynthesis, 4 out of every 16 hydrogen atoms would have fused to helium, so $14/16$ of all nucleons are protons and $2/16$ are neutrons. This means the universe contains 1.75×10^{80} protons, the same amount of electrons, 0.25×10^{80} neutrons, as well as a zillion of morons...