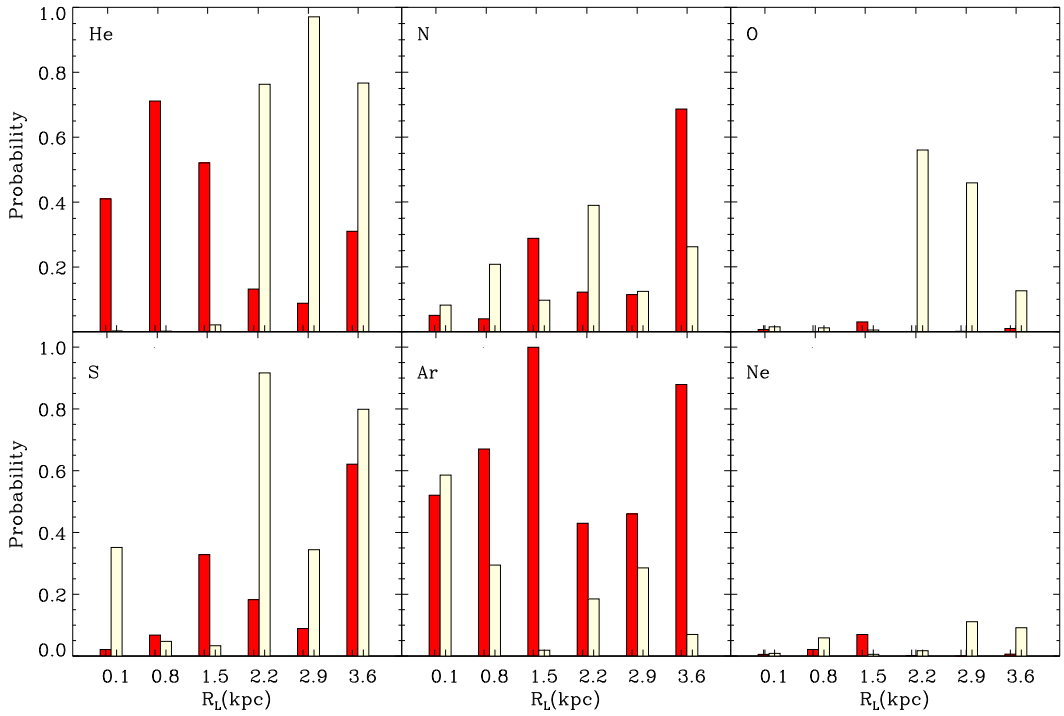

Fig. 4. Kolmogorov-Smirnov probability bar plot for each element as a function of the limiting radius of Groups I and II. Left filled bars correspond to the SSV08 scale and empty right bars to the Z95 scale.

TABLE 3

KOLMOGOROV-SMIRNOV PROBABILITIES

	$P(R_L)$ SSV08						$P(R_L)$ Z95					
R_L (kpc)	0.1	0.8	1.5	2.2	2.9	3.6	0.1	0.8	1.5	2.2	2.9	3.6
He	0.574	0.865	0.379	0.118	**0.080**	0.293	0.003	**0.0026**	0.022	0.763	0.971	0.767
N	**0.053**	0.075	0.335	0.103	0.099	0.647	**0.0819**	0.208	0.097	0.390	0.124	0.262
O	0.014	**0.001**	0.058	**0.001**	**0.001**	0.008	0.015	0.012	**0.0051**	0.560	0.459	0.126
S	**0.022**	0.074	0.370	0.154	0.077	0.583	0.352	0.047	**0.0334**	0.917	0.344	0.799
Ar	0.720	0.864	0.989	**0.394**	0.508	0.845	0.586	0.295	**0.0188**	0.185	0.285	0.070
Ne	0.014	0.046	0.128	0.001	**0.000**	0.007	0.009	0.059	**0.0056**	0.017	0.111	0.092

In Figure 5 the oxygen distribution for Group I is wider than that for Group II, while most objects from Group II have abundances centered at 8.5 dex. The other α-elements also show this pattern according to which Group II objects favor higher abundances than those from Group I. However, these differences are not larger than the individual errors in abundances. Among the α-elements, neon displays the largest difference between the two distributions. Nevertheless, some caution must be taken here. In a recent study by Milingo et al. (2010), there are some evidences that neon enhancement is present in a significant portion of PNe. This enhancement could be explained considering the charge exchange reaction $O^{++} + H^0 \rightarrow O^+ + H^+$ (see Peimbert, Luridiana, & Torres-Peimbert 1995, and references therein). Since the neon ICF depends inversely on the O^{++} abundance, the charge exchange reaction could increase the neon elemental abundance. If the neon enhancement is real, it does not represent the abundance of the interstellar medium at the time of the formation of the progenitor star. Thus, the neon distribution in Figure 5 must be interpreted carefully.

In Figure 6, showing the distribution of the abundances for the SSV08 scale, the oxygen distribution for Group I objects is wider than for Group II and the