

# CHEMICAL ABUNDANCES OF GALACTIC PLANETARY NEBULAE

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**Abstract.** The chemical composition of 86 planetary nebulae from the Strasbourg-ESO survey are analysed (Acker et al., 1989; Köppen et al., 1991). Strong correlations between O, S, Ar, as well as between N and N/O are found. Galactic radial gradients for the abundances of He, S, and Ar in the old disk nebulae are found in accord with the results of Faúndez-Albans and Maciel (1986). The S gradient is steeper than that of O, and the S/O ratio decreases with increasing distance from the galactic centre, which is quite different from the result deduced from HII regions.

**Key words:** Galaxy - Planetary nebulae - Chemical composition

## Galactic abundance gradients

Only objects belonging to the galactic disk were analysed. They were selected to have a deviation from the local circular motion of less than  $60 \text{ km.s}^{-1}$ , a helium abundance of less than 11.10, and a  $\lg(N/O)$  ratio of less than -0.3. In the following Table are given the constants  $a$  and  $b$  in the expression  $\lg(A(R)) = a + b(R - R_{\odot})$  (with the galactocentric distance  $R$  in  $\text{kpc}$ ,  $R_{\odot} = 7.8 \text{ kpc}$ ), the correlation coefficient  $r$ , the errors  $s_a$ ,  $s_b$ , and the number of nebulae used.

<i>Elem.</i>	<i>Sun</i>	<i>a</i>	<i>b</i>	<i>r</i>	<i>s<sub>a</sub></i>	<i>s<sub>b</sub></i>	<i>No.</i>
He	11.07	10.98	-0.011	0.81	0.02	0.003	11
N	7.99	8.05	-0.047	0.42	0.12	0.025	19
O	8.92	8.81	-0.014	0.20	0.08	0.016	21
S	7.23	6.89	-0.071	0.53	0.12	0.032	15
Ar	6.57	6.39	-0.014	0.46	0.05	0.010	10
N/O	-0.93	-0.70	-0.022	0.33	0.07	0.015	19
S/O	-1.69	-1.97	-0.053	0.61	0.08	0.020	15
Ar/O	-2.35	-2.49	-0.028	0.73	0.05	0.009	10

## References

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