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ON EXPLANATION OF THE DISCRETIZATION OF REDSHIFTS OF QUASARS

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On the base of observational data [1] of quasars and Seyfert 1 galaxies the influence of strong emission lines in their spectra on the distribution of redshifts, and on the diagram of relation between (U-B), (B-V) for the quasars and Sy 1 galaxies is considered.

By study of this problem I was using non - standard methods of investigation: median filtration and pair method (choosing a pair of objects with the same absolute magnitudes, however with maximal differences of colours (B-V), (U-B) or parameters Q=(U-B) - (B - V)).

From the above mentioned analysis the following results have been obtained $[2_55]$.

1. The work [2] gives new evidences of connection of Sy 1 type galaxies and quasars which can be considered in favour of cosmological nature of their redshift,

It is shown that discrete redshifts (z = 0.04; 0.12; 0.35; 0.67; 0.96; 1.36; 1.93; 2.61; 3.57) are due to selection effects of strong emission lines of quasars and absorption line OVI(1035A), which fall in the maxima of passband of U, B, V filters.

2. It is shown [3] that the differences between observed [6] and expected discrete values of quasars redshifts are negligible ($\Delta z < 0.1$).

The periodicities calculated from observed and expected redshifts are $\Delta lg(1+z_2)=0.091\pm0.005$ and $lg(1+z_2)=0.087\pm0.012$ respectively [3].

On the base of comparison of the observed quasars redshifts with the expected discretization of quasars redshifts is conditioned by the observational selection and their periodicity-by chance.

3. It is shown that the relation $\Delta \ln[1+z]=0.206$ suggested to represent the discretization of redshifts of quasars is conditioned by observational selection and

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Fig. 1. Colour-colour $[(U - B) \mod, (B - V) \mod]$ diagram for the O - Seyfert 1 (S1) galaxies and \bullet -quasars.

predetermined by using relations of the effective wavelengths of the photometric system U, B, V, R and also by the relations of the wavelengths of emission lines Mg II, OIII, CIV Ly α and absorption line OVI (1035 Å) of the quasars.

4. It is shown [5] that strong emission lines (MgII, OIII, CIV, Lycz) passing through the maxima of filters U, B, V bring to a linear and sometimes (in the z=0.1-1.4 interval) to cyclic changes in the dependence of U-B on B-V (Fig. 1). In Fig. 1 numbers near the points correcpond to redshifts z = 0.1; 0.2; ...; 1.4 respectively.

The mean values of variations of colours conditioned by strong emission lines (MgII; CIV; Lycc) is equal to about 0^m.15.

Об объяснении дискретизации красных смещений квазаров. Показано, что соотношение $\Delta \ln[1+z]=0.206$, предложенное для описания дискретизации пространственного распределения квазаров, является следствием наблюдательной селекции.

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REFERENCES

M.-P.Veron-Cetty and P.Veron, A Catalogue of Quasars and Active Nuclei, (5-Th edition), ESO, 1991.

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R.A. Vardanian, Astrofizika ,34, 41, 1991.

L.V.Mirzoyan, R.A.Vardanian, Astrofizika ,35, 211, 1991.

R.A. Vardanian, Astrofizika, 38, 1994 (in press)

R A. Vardanian, Astrofizika, 39 1995 (in press)

V.H.Arp, H.G.Bi, Y.Chu, X.Zhu, Astron. Astrophys, 239,33,1990.