

NEW EVIDENCE FOR NON-COSMOLOGICAL REDSHIFT

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Recently Arp (1997) has published a list of x-ray emitting blue stellar objects (BSO) around 24 Seyfert galaxies. Herewith we present our optical identification of 5 BSOs in the field NGC3516 obtained on April 4-5, 1997 using the 2.16m telescope at Xinlong Station, Beijing Astronomical Observatory. One of the objects Q1107+7232 with $z=2.10$ ($\theta = 4.34'$, θ is the angular distance from the center of NGC3516) is already listed in the Hewitt-Burbidge Catalog (1993). We find the other four objects are all quasars: Q1108+7226 with $z=0.328$ ($\theta = 11.23'$); Q1106+7244, $z=0.690$ ($\theta = 10.23'$); Q1105+7242, $z=0.930$, ($\theta = 10.99'$); Q1105+7238, $z=1.399$ ($\theta = 7.42'$); Q1107+7232, $z=2.10$ ($\theta = 4.34'$).

We find these quasars show a very good correlation between their redshifts and angular distances from NGC3516. The statistical analyses show that the linear regression is $z = 3.06 - 0.22\theta$, with the correlation coefficient $= -0.957$ and the standard error of the regression line $(S_y/x) = 0.23$. If these quasars were ejected from central galaxy, it means that the younger the quasar, the closer it is to the center, and the higher its redshift. These 5 quasars located less than 12 arc min from the X-ray Seyfert galaxy NGC3516 and distributed along the minor axis of this galaxy within ± 20 degree. Moreover, the 5 quasars just have redshift values which very close to the peaks of redshift periodicity: $z = 0.3, 0.6, 0.96, 1.41, 1.96$, which is consistent with the result that multi-quasars are associated with low redshift galaxies (Zhu and Chu, 1990). All of the interesting features indicated above for these 5 quasars in the NGC3516 field are not easily interpreted using a cosmological origin of quasar redshift. We conclude that this is a further new evidence that quasars have significant non-cosmological redshift components.

References

- Arp. H., (1997), *A.A.p.*, **319**, p.33.
Zhu, X. and Chu, Y., (1990), *Acta Astronomica Sinica*, **31**, p.132.