

A SEARCH FOR A VESTIGIAL OBJECT IN THE CENTRE OF A COSMIC VOID

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The revelation that galaxies are apparently distributed on two dimensional surfaces that enclose bubble-like voids (de Lapparent et al. 1986, Fairall et al. 1985) has raised considerable interest. We have started an ongoing program to identify and confirm the existence of such structures - as extracted from our redshift database and others. We are concerned to measure how close to sphericity the bubbles fall and, in particular, to see how well their centres can be located.

If some form of explosion scenario (e.g. Ostriker and Cowie 1980) is responsible for their formation, then it is just conceivable that some remnant or vestige of the seed object might remain at the centre of the void. Knowing void centres, we can then search for possible objects.

So far we have examined voids identified from our southern redshift database and one of them has proved a suitable candidate (it is the same void pointed out by da Costa, also at this conference). We find its centre to lie at $V = 4100 \text{ km s}^{-1}$ in the direction R.A. = $2^{\text{h}}39^{\text{m}}.4 \pm 3^{\text{m}}.0$, Decl. = $-67^{\circ}07' \pm 18'$ (1950). No known radio or X-ray source falls within the error box, nor is there any conspicuous optical object. However, four IRAS point sources fall in the box, of which only three are accounted for by stellar identifications. That remaining is IRAS 02374-6711, a weak source registered only at $60 \mu\text{m}$. Such sources are relatively common so it seems highly unlikely that we have tracked down a vestigial object. Nevertheless a negative result, if confirmed, still conveys constraints on the origin of the void.

References

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