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Contribution ID: 62

Type: Oral Presentation

The mass overdensity of the Great Attractor as determined from a deep NIR imaging survey

Friday, 13 July 2012 11:00 (20 minutes)

Abstract content
 (Max 300 words)

The controversy whether the Great Attractor (GA) is at rest with respect to the CMB radiation or itself is moving towards a much larger overdensity, the three times more distant Shapley Concentration is still not resolved despite dedicated multi-wavelength survey to unravel the mystery of the GA. This paper presents the analysis of a deep near-infrared (J H K) imaging survey (37.5 square degrees) aimed at tracing the galaxy distribution of the Great Attractor (GA) across the most opaque part of the Zone of Avoidance.

The resulting galaxy catalog of 4630 galaxies will be presented and its completeness limit as a function of foreground extinction and star density discussed. Although the analyzed galaxy distribution reveals no new major galaxy clusters at the GA distance (albeit some more distant ones), the overall number counts and luminosity density indicate a clear and surprisingly smooth overdensity at the GA distance that extends over the whole surveyed region. A mass estimate of the Norma Wall overdensity will be derived from (a) galaxy number counts and (b) photometric redshift distribution. While this gives a lower value compared to the original prediction by Lynden-Bell et al. 1988, it is consistent with more recent independent assessments.

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Session Classification: Astrophysics

Track Classification: Track D1 - Astrophysics