



Contribution ID: 186

Type: Oral Presentation

Extragalactic Large-Scale Structures in the Northern Zone of Avoidance

Thursday, 12 July 2012 17:00 (20 minutes)

Abstract content
 (Max 300 words)

Regions along the Galactic Plane $|b| < 5$ deg are mostly highly obscured due to dust extinction and stellar confusion. Contrary to optical and near-infrared surveys, this does not hold for the long 21 cm wavelength line emission of the neutral hydrogen gas (HI). This line emission presents an excellent opportunity for the exploration of the distribution of galaxies in the so called "Zone of Avoidance" (ZoA). An HI survey of the northern ZoA was conducted using the Nancay Radio Telescope for detections of near-infrared bright galaxies from the 2MASS Extended Sources Catalogue.

The resulting redshift distribution presented by this survey shows a number of structures that form part of the Perseus-Pisces Supercluster chain that were hitherto uncharted. The most conspicuous of these crosses the Galactic Plane at Galactic latitude $b = 0.5$ deg and longitude $l = 160$ deg out to a redshift of $z = 0.02$ ($cz = 6500$ km/s). This pronounced ridge hosts two previously confirmed radio sources 3C 129 and the weaker 3C 129.1 within an X-ray cluster that forms part of the chain. In addition a filamentary second crossing of the Perseus-Pisces chain of the ZoA at $l = 90$ deg is discussed.

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Yes

Level for award
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MSc

Main supervisor (name and email)
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Prof Renee C. Kraan-Korteweg

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Yes

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Session Classification: Astrophysics

Track Classification: Track D1 - Astrophysics