

# Alternative Cosmology Group Newsletter - April 2007

Posted 4/26/07

## WMAP anomalies

The anomalous large scale anisotropies of the WMAP measurements of the CBR continue to be studied intensively and many explanations are being put forward. Rakic and Schwarz show that the WMAP result is highly incompatible with the consensus cosmology, but is a planar, rather than axial, alignment. In two papers, Longo points out, as others have, the coincidence of the WMAP alignment and the asymmetry in galaxy spins, which could imply a very large scale magnetic field. Rudnick et al point to other correlations that imply the WMAP results could be affected by large scale inhomogeneities, while Verschuur questions if some of the WMAP results are in fact generated within our own galaxy.

Correlating anomalies of the microwave sky: The Good, the Evil and the Axis

Authors: Aleksandar Rakic, Dominik J. Schwarz

<http://arxiv.org/abs/astro-ph/0703266v2>

Is the Cosmic "Axis of Evil" due to a Large-Scale Magnetic Field?

Authors: Michael J. Longo

<http://arxiv.org/abs/astro-ph/0703694v2>

Does the Universe Have a Handedness?

Authors: Michael J. Longo

<http://arxiv.org/abs/astro-ph/0703325v2>

Extragalactic Radio Sources and the WMAP Cold Spot

Authors: Lawrence Rudnick, Shea Brown, Liliya R. Williams

<http://arxiv.org/abs/0704.0908v1>

High Galactic latitude interstellar neutral hydrogen (HI) structure and associated acoustic-scale WMAP hot spots

Authors: Gerrit L. Verschuur

<http://arxiv.org/abs/0704.1125v1>

## SZ anomaly continues

The lack of SZ effect has raised questions about where the CBR originates from. Beilby and Shanks show that attempts to resolve this anomaly come up short.

Anomalous SZ Contribution to 3 Year WMAP Data

Authors: R.M. Bielby, T. Shanks

<http://arxiv.org/abs/astro-ph/0703470v1>

## Hubble anisotropy

A final anisotropy studied this month is in the Hubble constant, which is not quite an isotropic constant.

Anisotropy in the Hubble constant as observed in the HST Extragalactic Distance Scale Key Project results

Authors: M. L. McClure, C. C. Dyer

<http://arxiv.org/abs/astro-ph/0703556v1>

## Older and older high-z galaxies

More evidence that galaxies are too old for conventional cosmology.

Unveiling the oldest and most massive galaxies at very high redshift

Authors: G. Rodighiero (1), A. Cimatti (2), A. Franceschini (1), M. Brusa (3), J. Fritz (4), M. Bolzonella (4) (1-Padova University, 2-Bologna University, 3-MPE, 4-INAF-Bologna)

<http://arxiv.org/abs/astro-ph/0703276v1>

## Too little Helium

Main sequence stars seem to have less helium than Big bang Nucleosynthesis predicts.

The Helium abundance and Delta Y / Delta Z in Lower Main Sequence stars

Authors: Luca Casagrande (1,2), Chris Flynn (1,2), Laura Portinari (1,2), Leo Girardi (3), Raul Jimenez (4) ((1) Tuorla Observatory, (2) University of Turku, (3) INAF Padova Observatory, (4) UPenn)

<http://arxiv.org/abs/astro-ph/0703766v1>

## More on MOND and the Bullet clusters

Two papers indicate that it is easier to explain the Bullet cluster dynamic with MOND than with CDM.

The collision velocity of the bullet cluster in conventional and modified dynamics

Authors: Garry W. Angus (St. Andrews), Stacy S. McGaugh (Maryland)

<http://arxiv.org/abs/0704.0381v1>

Timing and Lensing of the Colliding Bullet Clusters: barely enough time and gravity to accelerate the bullet

Authors: HongSheng Zhao (SUPA, St Andrews)

<http://arxiv.org/abs/0704.0094v1>

#### **Periodicities in absorption line systems**

The redshift distribution of absorption-line systems in QSO spectra

Authors: A.I. Ryabinkov, A.D. Kaminker, D.A. Varshalovich

<http://lanl.arxiv.org/abs/astro-ph/0703277v1>

#### **Diffuse Gamma ray background**

Measurements on diffuse gamma rays are reported. While not done in this paper, such measurement can set limits on the distribution of anti-matter in the universe.

The Extragalactic Gamma Ray Background

Authors: Charles D. Dermer (NRL)

<http://arxiv.org/abs/0704.2888v1>

#### **More on nature of soft-x-ray emission from clusters.**

Possible non-thermal nature of the soft-excess emission in the cluster of galaxies Sersic 159-03

Authors: N. Werner, J.S. Kaastra, Y. Takei, R. Lieu, J. Vink, T. Tamura

<http://arxiv.org/abs/0704.0475v1>