Alternative Cosmology Group Newsletter - June-July 2007

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WMAP Anisotropies

Three papers deal with the WMPA data. The first one shows, again, that the anisotropies are non Gaussian, and concludes that this contradicts inflation predictions. The second shows that large-angle data is not a result of sky-cut. The third humorously correlates WMAP and the map of the Earth.

Non-Gaussianity analysis on local morphological measures of WMAP data
Authors: Y. Wiaux, P. Vielva, R. B. Barreiro, E. Martinez-Gonzalez, P. Vandergheynst
http://arxiv.org/abs/0706.2346v1

A note on the large-angle anisotropies in the WMAP cut-sky maps
Authors: A. Bernui, B. Mota, M.J. Reboucas, R. Tavakol
Journal reference: Int.Mod.Phys. D16 (2007) 411-420
http://arxiv.org/abs/0706.0575v1

On the origin of the cosmic microwave background anisotropies
Authors: Ria Follop, Anais Rassat, Asantha Cooray, Filipe B. Abdalla
http://arxiv.org/abs/astro-ph/0703806

More anisotropy

The first paper confirms earlier reports (see march newsletter) that the Hubble measurements are asymmetrical. The second confirms on a larger scale earlier reports of a preferential spin direction for spiral galaxies, and thus a large-scale asymmetry in the universe.

(An)isotropy of the Hubble diagram: comparing hemispheres
Authors: Dominik J. Schwarz, Bastian Weinhorst
http://arxiv.org/abs/0706.0165

Evidence for a Preferred Handedness of Spiral Galaxies
Authors: Michael J. Longo
http://arxiv.org/abs/0707.3793

Dark Matter vs Mond

Four papers dealing with the battle between DM and MOND. The first paper is yet another negative lab result searching for DM. The next two papers, one by MOND pioneer Milgrom show that dwarf tidal galaxies which should contain no DM have the rotational curves that can be explained by MOND. The fourth paper shows that globular clusters, which also should contain no DM, also match MOND predictions.

First Results from the XENON10 Dark Matter Experiment at the Gran Sasso National Laboratory
Authors: J. Angle, E. Aprile, F. Arneodo, L. Baudis, A. Bernstein, A. Bolozdynya, P. Brusov, L.C.C. Coelho, C.E. Dahl, L. DeViveiros, A.D. Ferella, L.M.P. Fernandes, S. Fiorucci, R.J. Gaitskell, K.L. Giboni, R. Gomez, R. Hasty, L. Kastens, J. Kwong, J.A.M. Lopes, N. Madden, A. Manalaysay, A. Manzur, D.N. McKinsey, M.E. Monzani, K. Ni, U. Oberlack, J. Orboeck, G. Plante, R. Santorelli, J.M.F. dos Santos, P. Shagin, T. Shutt, P. Sorensen, S. Schulte, C. Winant, M. Yamashita (XENON Collaboration)
http://arxiv.org/abs/0706.0039v1

MOND and the mass discrepancies in tidal dwarf galaxies
Authors: Mordehai Milgrom
http://arxiv.org/abs/0706.0875v1

Tidal dwarf galaxies as a test of fundamental physics
Authors: G. Gentile, B. Famaey, F. Combes, P. Kroupa, H. S. Zhao, O. Tiret
http://arxiv.org/abs/0706.1976v2

Using Globular Clusters to Test Gravity in the Weak Acceleration Regime
Authors: Riccardo Scarpa, Gianni Marconi, Roberto Gilmozzi, Giovanni Carraro
http://www.eso.org/sci/publications/messenger/

No evolution of QSO Metallicity

New data extend to z=6 the findings that there is no apparent evolution of Metallicity in QSO spectra, conflicting either with the idea that high z galaxies are very young, or with the assumption that high z QSOs are in fact at the distance indicated by their redshift.

Black hole masses and enrichment of z ~ 6 SDSS quasars
Authors: Jaron D. Kurk (MPIA Heidelberg), Fabian Walter, Xiaohui Fan, Linhua Jiang, Dominik A. Riechers, Hans-Walter Rix, Laura Pentericci, Michael A. Strauss, Chris Carilli, Stefan Wagner
http://arxiv.org/abs/0707.1662v1

Proton beams in AGN jets

Lastly, this paper shows that proton beams at high energy could produce the radiation observed from AGN jets., an idea elaborated in the 1980's by the editor.

Ultra High Energy Cosmic ray and gamma-ray signatures of inductive acceleration in AGN jets

Authors: Rachid Ouyed (University of Calgary, Calgary, Canada), Guenter Sigl (AstroParticules et Cosmologie, Paris, France & Observatoire de Paris, Paris, France), Maxim Lyutikov (Purdue University, West Lafayette, IN, USA)

http://arxiv.org/abs/0706.2812v1