Monthly Notes of the Alternative Cosmology Group – February 2011

The ACG Webmaster who distributes this newsletter to subscribers would prefer not to receive related correspondence.

Please address all correspondence to MNACG Editor, Hilton Ratcliffe: mnacg_editor@cosmology.info.

The ACG newsletter is distributed gratis to subscribers. Get onto our mailing list without obligation at www.cosmology.info/newsletter. The current newsletter is a review of 1194 papers published on arXiv under astro-ph, together with 628 under gen-phys, for the month of January, 2011. We now include papers archived elsewhere, provided access is full and open. The Alternative Cosmology Group draws its mandate from the open letter published in *New Scientist*, 2004 (www.cosmologystatement.org), and these monthly notes seek to publicise recently published empirical results that are aligned with that ethos. In other words, what observations seem anomalous in terms of the Standard Model of Cosmology? We prefer observational results and tend to avoid complete cosmologies and purely theoretical work. Discussion of method is welcome. If you would like to suggest recently published or archived papers for inclusion, please send the arXiv, viXra or other direct reference and a brief exposition to Hilton Ratcliffe (hilton@hiltonratcliffe.com). Note that our spam filter rejects slash and colon in the text, so please write web addresses commencing "www".

I. Plasma Cosmology

1. **Title: The Void Galaxy Survey**
   Authors: R. van de Weygaert, et al
   a arXiv:1101.4187
   Quote: "The Void Galaxy Survey (VGS) is a multi-wavelength program to study $\sim$60 void galaxies. Each has been selected from the deepest interior regions of identified voids in the SDSS redshift survey on the basis of a unique geometric technique, with no a prior selection of intrinsic properties of the void galaxies ... Amongst its most tantalizing findings is the possible evidence for cold gas accretion in some of the most interesting objects, amongst which are a polar ring galaxy and a filamentary configuration of void galaxies."

II. MOND

1. **Title: Distant star clusters of the Milky Way in MOND**
   Authors: Hosein Haghi, Holger Baumgardt, Pavel Kroupa
   arXiv:1101.1952

Quote: *"We calculate the minimum number of measured stars necessary to distinguish between Newtonian gravity and MOND with the Kolmogorov-Smirnov test. We also show that for most clusters it is necessary to measure the velocities of between 30 to 80 stars to distinguish between both cases. Therefore the observational measurement of the line-of-sight velocity dispersion of these clusters will provide a test for MOND."*

2. **Title: MOND's Problem in Local Group**
   Authors: Yan-Chi Shi
   arXiv:1101.2821
   Quote: "I use the distances and motions of Local Group galaxies to test Modified Newtonian Dynamics (MOND). The old Local Group timing argument of Kahn & Woltjer, which assumed Newtonian gravity and a simple radial orbit, indicated that the total mass of M31 and the Milky Way far exceeds their known baryonic mass. Here I apply MOND to study the same problem. With the same radial orbit assumption, I find that the total mass of M31 and the Milky Way predicted by MOND is less than the known baryonic masses of these two galaxies. I find a similar result holds for all the dwarf galaxies in the Local Group, if they are assumed to move radially with respect to the center of mass of M31 and the Milky Way. If the known baryonic mass of M31 and Milky Way is used, MOND requires all galaxies in the Local Group to have non-radial motions with respect to the center of mass of M31and the Milky Way in order to be consistent with their observed motion and distance. The non-radial orbit requirement is inconsistent with the requirement of high radial anisotropy in order to reconcile MOND with the velocities of satellite galaxies around host galaxies from the Sloan Digital Sky Survey."

III. CMBR anomalies

1. **Title: Observational Scan Induced Artificial CMB Anisotropy**
   Authors: Hao Liu, Ti-Pei Li
   arXiv:1101.2720

   Quote: *"To reliably detect the cosmic microwave background (CMB) anisotropy is of great importance in understanding the birth and evolution of the Universe. One of the difficulties in CMB experiments is the domination of the measured CMB anisotropy maps by the Doppler dipole moment from the motion of the antenna relative to the CMB. For each measured temperature the expected dipole component has to be calculated separately and then subtracted from the date. A small error in dipole direction, antenna pointing direction, sidelobe pickup contamination, and/or timing synchronism, can raise significant deviation in the dipole cleaned CMB temperature. After a full-sky observation scan, the accumulated deviations will be structured with a pattern closely correlated to the observation pattern with artificial anisotropies on large scales, including artificial quadrupole, octopole, etc in the final CMB map. Such scan-induced anisotropies on large scales can be predicted by the true dipole moment and observational scan scheme. Indeed, the expected scan-induced quadrupole pattern of the WMAP mission is perfectly in agreement with the published WMAP quadrupole. With the scan strategy of the Planck mission, we predict that scan-induced anisotropies will also produce an artificially aligned quadrupole. The scan-induced anisotropy is a common problem for all sweep missions and, like the foreground emissions, has to be removed from observed maps. Without removing the scan-induced effect, CMB maps from COBE, WMAP, and Planck as well, are unreliable for studying the CMB anisotropy."*

2. **Title: Cobe and Wmap: Signal Analysis by Fact or Fiction?**
   Authors: Stephen J. Crothers
   viXra:1101.0009

   Quote: *"Pierre-Marie Robitaille, a Professor of Radiology at Ohio State University, is an expert when it comes to instrumentation and signal analysis. It was Robitaille who conceived and directed the construction of the world's first 8 Tesla Magnetic Resonance Imaging (MRI) scanner [1,2]. In doing so, he nearly doubled the maximum field strength in MRI and gave birth to Ultra High Field Magnetic Resonance Imaging (UHFMRI). Robitaille's scanner immediately revealed anatomical structures within the human brain that were previously never seen on human scans [3]. In recent years, Robitaille has applied his skills to astrophysics, and his findings are very significant."*

IV. Redshift

1. **Title: Sifting the Doppler Effect**
   Authors: Roald C. Maximo
   viXra:1101.0042

   Quote: *"What many people do not realize is that in the root of all motion detection by means of sound or electromagnetic waves, be it by interferometry or direct wave length measurements, there is, invariably, the all important Doppler effect. Experimenters who conducted experiments in interferometry, which involve phase comparisons, resorted frequently to a naive analogy with boats in river flows to substantiate their calculations. That analogy does not take into account that the source and observer are moving together in the same direction. And that makes all the difference! Apparently, the prime importance of the Doppler effect has been consistently neglected. Thinking in terms of Doppler makes things easier!. So, let's, firstly, try to bring it back to its rightful stand."*

   Editor's comment : WRT the paper below, I would suggest that investigators in this field look critically the redshift field. If it is considered to be an effect resulting from a cocktail of causes, of which Doppler shift and internal energy are components, a better fit and fewer open questions would result.

2. **Title: The dependence of low redshift galaxy properties on environment**
   Authors: Simone M. Weinmann, Frank C. van den Bosch, Anna Pasquali
   arXiv:1101.3244

   Quote: *"Nevertheless, environmental effects are not fully understood yet. In particular, it is puzzling that the impact of environment on a galaxy seems independent of its stellar mass. This may indicate that the stripping of the extended gas reservoir of satellite galaxies predominantly occurs via tidal forces rather than ram-pressure."*

V. Stellar Evolution and Large-Scale Structure

1. **Title: A mature cluster with X-ray emission at z=2.07**
   Authors: R. Gobat et al
   arXiv:1011.1837
   Quote: *"We report evidence of a fully established galaxy cluster at z=2.07, consisting of a ~20sigma overdensity of red, compact spheroidal galaxies spatially coinciding with extended X-ray emission detected with XMM-Newton… These properties imply that this structure could be the most distant, mature cluster known to date and that X-ray luminous, elliptical-dominated clusters are already forming at substantially earlier epochs than previously known."*

2. **Title: Why are most molecular clouds not gravitationally bound?**
   Authors: C. L. Dobbs, A. Burkert, J. E. Pringle
   arXiv:1101.3414v1

   Quote: *"The most recent observational evidence seems to indicate that giant molecular clouds are predominantly gravitationally unbound objects."*

   Editor's comment: The nature of unbound molecular gas in interstellar space is such that it has very low intrinsic luminosity. Whether or not we could resolve images of hydrogen clouds at distances inferred from high redshift is a moot point.

3. **Title: Molecular Gas at High Redshift**
   Authors: Fabian Walter, Chris Carilli, Emanuele Daddi
   arXiv:1101.4022

Quote: "In order to understand galaxy evolution through cosmic times it is critical to derive the properties of the molecular gas content of galaxies, i.e. the material out of which stars ultimately form. The last decade has seen rapid progress in this area, with the detection of massive molecular gas reservoirs at high redshifts in submillimeter-selected galaxies and quasars. In the latter case, molecular gas reservoirs have been quantified out to redshifts z>6, i.e. towards the end of cosmic reionization when the universe was less than one Gyr old."

VI. Black Holes

1. **Title: The fallacy of Oppenheimer Snyder Collapse: no general relativistic Collapse at all, no black hole, no physical singularity**
   Authors: Abhas Mitra
   arXiv:1101.0601

   Quote: *"Thus, in reality, general relativistic homogeneous dust collapse does not lead to the formation of any black hole in conformity of many previous studies"*

2. **Title: The Black Hole Catastrophe and the Collapse of Spacetime**
   Authors: Stephen J. Crothers
   viXra:1101.0007

   Quote: *"Despite the assertions of the astronomers and astrophysicists, nobody has ever found a black hole, anywhere, let alone "imaged" one. The pictures adduced to convince are actually either artistic impressions (i.e. drawings) or photos of otherwise unidentified objects imaged by telescopes and merely asserted to be due to black holes, ad hoc. "*

   Editor's comment: Kormendy and Bender's study contains much of the confused rhetoric that is required by descriptions of Black Holes and Dark Matter.

3. **Title: Supermassive black holes do not correlate with dark matter halos of galaxies**
   Authors: John Kormendy, Ralf Bender
   a arXiv:1101.4650

   Quote: "Supermassive black holes have been detected in all galaxies that contain bulge components when the galaxies observed were close enough so that the searches were feasible. Together with the observation that bigger black holes live in bigger bulges, this has led to the belief that black hole growth and bulge formation regulate each other. That is, black holes and bulges "coevolve". Therefore, reports of a similar correlation between black holes and the dark matter halos in which visible galaxies are embedded have profound implications. Dark matter is likely to be nonbaryonic, so these reports suggest that unknown, exotic physics controls black hole growth. Here we show - based in part on recent measurements of bulgeless galaxies - that there is almost no correlation between dark matter and parameters that measure black holes unless the galaxy also contains a bulge. We conclude that black holes do not correlate directly with dark matter. They do not correlate with galaxy disks, either. Therefore black holes coevolve only with bulges. This simplifies the puzzle of their coevolution by focusing attention on purely baryonic processes in the galaxy mergers that make bulges."

VII. Method

1. **Title: Modified Gravity or Dark Matter?**

   Authors: J. W. Moffat

   arXiv:1101.1935
   Quote: "Modified Gravity (MOG) has been used successfully to explain the rotation curves of galaxies, the motion of galaxy clusters, the Bullet Cluster, and cosmological observations without the use of dark matter or Einstein's

cosmological constant. We review the main theoretical ideas and applications of the theory to astrophysical and cosmological data."

Editor's comment: The following paper is important for understanding the role of SNe in cosmology. The assumption has been that SNe are standard candles by class. Exceptions to every class of SN clearly indicate that this assumption is incorrect, and attempts to accommodate non-standard light curves are fudging the science.

2. **Title: Optical studies of SN 2009jf: A type Ib supernova with an extremely slow decline and aspherical signature**

   Authors: D. K. Sahu, U.K. Gurugubelli, G. C. Anupama, K. Nomoto

   arXiv:1101.2068
   Quote: ""

Editor's comment: The following paper promises a connection between cosmology and laboratory physics. Were it to do so, it would mark a fundamental reform in the way that cosmology is practiced. Unfortunately, it does nothing of the kind, and simply reinforces the status quo where theoretical fudging is introduced to explain >90% of the Universe.

3. **Title: Cosmology and Fundamental Physics and their Laboratory Astrophysics Connections**

   Authors: W. C. Haxton
   v**arXiv:1101.2699**
   Quote: "The Panel's response was formulated around four big questions:" 1) How did the universe begin (the mechanism behind inflation)? 2) Why is the universe accelerating (the nature of the dark energy)? 3) What is dark matter? 4) What are the properties of neutrinos? Gravitational wave astronomy was designated as the discovery area."

4. **Title: On the connection between Newtonian simulations and General Relativity**

   Authors: Nora Elisa Chisari, Matias Zaldarria

   arXiv:1101.3555

   Quote: "The method of choice for simulating large scale structure is numerical N-body simulations which are performed in the Newtonian limit. Even though one might worry that the use of the Newtonian approximation would make it impossible to use these simulations to compute properties on very large scales we show that the simulations are still solving the dynamics correctly even for long modes and give formulas to obtain the position of particles in the Newtonian gauge given the positions computed in the simulation. We also give formulas to convert from the output coordinates of N-body simulations to the observable coordinates of the particles."

5. **Title: Title: Vixra.org and Reversal of a Paradigm Shift**
   Authors: Charles B. Leffert
   viXra:1101.0084
   Quote: "In 1998-1999 two teams of astronomers, measuring the radiation from exploding supernova Ia (SNIa) stars, found that their predicted curves fell short of the measured values of magnitude m, or distance modulus m-M, for redshift z ~0.5 - 1.0. Instead of announcing incomplete theoretical models, and searching for an increase in the luminosity distance dL, they used their free parameters and added more physical content to our universe of either Einstein's rejected lambda or dark energy, to better fit the data. Such added contents also added acceleration to the expansion rate of our universe. The unwise acceptance of this added acceleration by the scientific community, now known as the acceleration paradigm shift, will become one of the greatest, and more costly, blunders of science. It so happened in 1993, that this author had started the development of a new nonrelativistic model of the universe and by 1998 could check his new model for its prediction of the magnitude of the SNIA data near redshift z ~ 1. Using the new computer model, a check on the first reported data, indicated the new model could predict the data with no

addition of either lambda or dark energy. As the development of the author's model continued, a long 20 year effort began to try to halt and reverse the acceleration paradigm. This paper describes the record of those efforts, and it adds another face of experience to most all of the major points of the "Why viXra?"

6. **Title: A Simple Flat-Universe Model Recovering Mach Principle**

   Authors: Jin He

   viXra:1101.0077

   Quote: *"Mach Principle presents the absolute universe. For example, when you stand on the ground and relaxed, your arms fall down naturally. However, if you rotate your body then your arms are lifted up as the rotation is faster and faster. Mach principle is that the matter of the whole universe can affect local dynamic systems. That is, the matter of the whole universe sets up the local absolute reference frames. However, both the theories of general relativity and Big Bang are against the absolute reference frames of Mach Principle. Here I present a simple model of flat universe which is consistent to most cosmic laws, and Mach Principle is recovered amazingly."*

7. **Title: Introducing Distance and Measurement in General Relativity: Changes for the Standard Tests and the Cosmological Large-Scale**
   Authors: Stephen J. Crothers
   viXra:1101.0015

   Quote: "Relativistic motion in the gravitational field of a massive body is governed by the external metric of a spherically symmetric extended object. Consequently, any solution for the point-mass is inadequate for the treatment of such motions since it pertains to a fictitious object. I therefore develop herein the physics of the standard tests of General Relativity by means of the generalised solution for the field external to a sphere of incompressible homogeneous fluid."

8. **Title: Observational Scan Induced Artificial CMB Anisotropy**
   Authors: Hao Liu, Ti-Pei Li
   arXiv:1101.2720

   Quote: "To reliably detect the cosmic microwave background (CMB) anisotropy is of great importance in understanding the birth and evolution of the Universe. One of the difficulties in CMB experiments is the domination of measured CMB anisotropy maps by the Doppler dipole moment from the motion of the antenna relative to the CMB. For each measured temperature the expected dipole component has to be calculated separately and then subtracted from the data. A small error in dipole direction, antenna pointing direction, sidelobe pickup contamination, and/or timing synchronism, can raise significant deviation in the dipole cleaned CMB temperature. After a full-sky observational scan, the accumulated deviations will be structured with a pattern closely correlated to the observation pattern with artificial anisotropies on large scales, including artificial quadrupole, octopole etc in the final CMB map. Such scan-induced anisotropies on large scales can be predicted by the true dipole moment and observational scan scheme. Indeed, the expected scan-induced quadrupole pattern of the WMAP mission is perfectly in agreement with the published WMAP quadrupole. With the scan strategy of the Planck mission, we predict that scan-induced anisotropies will also produce an artificially aligned quadrupole. The scan-induced anisotropy is a common problem for all sweep missions and, like the foreground emissions, has to be removed from observed maps. Without doing so, CMB maps from COBE, WMAP, and Planck as well, are not reliable for studying the CMB anisotropy."

VIII. Titles of the month

1. **Title: What is a Galaxy? Cast your vote here...**

   Authors: Duncan Forbes, Pavel Kroupa

arXiv:1101.3309

2. **Title: Viva Panspermia!**

   Authors: N. Chandra Wickramasinghe

   arXiv:1101.4295