Monthly Notes of the Alternative Cosmology Group – March 2010

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 937 papers published on arXiv under astro-ph, together with 478 under gen-phys, for the month of February, 2010. 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 this newsletter seeks to publicise recently published empirical results that are aligned with that ethos. 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".

CCC2 Proceedings Volume

Thanks to the almost single-handed efforts of Frank Potter, the proceedings volume of the *2nd Crisis in Cosmology Conference* has now been published and is available for purchase. It is very well turned out indeed and well worth the purchase price. It is a highly recommended reference work in contemporary cosmology. Here is Frank's letter explaining the purchase procedure:

Dear CCC-2 Participant,

(1) I now have the 2nd Crisis in Cosmology, CCC-2 proceedings book ready for purchase by credit card through Paypal (or by Cashier's Check or Money Order).

(2) To place your order (or check out the TOC) go to:

http://www.sciencegems.com/CCC2/CCC2proceedings.html

N.B. I will send you the book as soon as I know you have ordered and have your address.

(3) There are 3 different rates:

(i) U.S. shipping address ($13.45, 3-4 days)

(ii) Canada or Mexico ($22.39, 6 - 10 days)

(iii) International ($25.23, 6 - 10 days).

(4) Note that these rates offer a considerable savings over the $65 normal price plus shipping charges.

(5) If you buy the book, you will also have online ebook access to this proceedings after I send the publisher the list of buyers.

(6) Note that the last article in the proceedings is a wonderful summary article that includes predictions for critical cosmological measurements that is based upon talks about the different conjectured cosmologies given at both Crisis in Cosmology conferences.

Thank you,

Frank Potter

Volunteer wanted to help with cosmology research—Eric Lerner.

I and my colleagues are continuing research on the surface brightness of galaxies, which is a key test of the expansion of the universe. But, due to other commitments on our time, we need help with some tasks. We need a computer-savvy volunteer to down load and do some preliminary processing of images of a couple of hundred galaxies from the GALEX NUV catalog. No astronomical experience is required, just computer skills. The volunteer's work will be acknowledged in any paper that emerges from the research and we'll share early results with the volunteer.

(This research is not funded.) If interested, please contact Eric Lerner at elerner@igc.org.

Letter from Jacques Moret-Bailly

Dear Hilton

Last year, I was astonished to observe that many astrophysicists use a Monte-Carlo computation which does not take the phases of the pilot waves of the photons into account, to study the propagation of light in atomic hydrogen and other gases. While the method is good to study the interaction of neutrons with uranium atoms, it is absurd to use it in spectroscopy because it denies interferences, diffraction,... all wave optics.

The reference of my critics is:

arXiv:1002.1630

With best regards,

Jacques Moret-Bailly

Overlooked

Thanks are due to Eric Lerner for pointing out that I had overlooked the following papers from December, with apologies to the authors concerned:

arXiv:astro-ph/0912.3943 **Baryons and Their Halos** Authors: Stacy McGaugh

arXiv:astro-ph/0912.3737 **Galactic evolution of D, 3He and 4He** Authors: Donatella Romano

Books

ACG members have over the years authored a number of important books expressing non-standard points of view. Examples are *The Big Bang Never Happened* (Eric Lerner); *Seeing Red* (Halton Arp); *Dark Matter, Missing Planets, and New Comets* (Tom Van Flandern); *The Discovery of Cosmic Fractals* (Yurij Baryshev and Pekka Teerikorpi); *Big Bang Blasted* (Lyndon Ashmore); Bye *Bye Big Bang Hello Reality* (William Mitchell); and my own recently published second book, *The Static Universe – Exploding the Myth of Cosmic Expansion* (Hilton Ratcliffe, Apeiron, Montreal, 2010). We would like to compile a bibliography of ACG members' heterodox books, so please send me details, particularly those that have been published recently.

Speed of Light

A great deal of excitement ensued from the publication in December of Gezari's paper claiming to show variance in the speed of light by lunar laser ranging. Although the paper was subsequently shown to be fundamentally flawed, it did encourage some lateral thinking on the subject. We noted some of the responses in the January newsletter, but wish to conclude the discussion of Gezari's experiment with reference to two recent papers. Firstly, a rebuttal:

[298] arXiv:1002.3968

Title: The invariance of the speed of light

Authors: Jerrold Franklin

Secondly, Reg Cahill has published a paper which purports to show light-speed variance by a slightly different method, using the Apache Point Lunar Laser-ranging Operation (APOLLO).

http://arxiv.org/abs/1001.2358

Title: Lunar Laser-Ranging Detection of Light-Speed Anisotropy and Gravitational Waves

Author: Reginald T. Cahill

Expansion/Evolution/Nucleosynthesis

Martín López-Corredoira finds some disparities between galaxian evolution and the Standard Model. Quote:

"Assuming the standard cosmological model as correct, the average linear size of galaxies with the same luminosity is six times smaller at z=3.2 than at z=0, and their average angular size for a given luminosity is approximately proportional to 1/z. Neither the hypothesis that galaxies which formed earlier have much higher densities nor their luminosity evolution, mergers ratio, or massive outflows due to a quasar feedback mechanism are enough to justify such a strong size evolution. Also, at high redshift, the intrinsic ultraviolet surface brightness would be prohibitively high with this evolution, and the velocity dispersion much higher than observed. We explore here another possibility to overcome this problem by considering different

cosmological scenarios that might make the observed angular sizes compatible with a weaker evolution. One of the models explored, a very simple phenomenological extrapolation of the linear Hubble law in a Euclidean static universe, fits the angular size vs. redshift dependence quite well, which is also approximately proportional to 1/z with this cosmological model. There are no free parameters derived ad hoc, although the error bars allow a slight size/luminosity evolution. The type Ia supernovae Hubble diagram can also be explained in terms of this model with no ad hoc fitted parameter. WARNING: I do not argue here that the true Universe is static. My intention is just to discuss which theoretical models provide a better fit to the data of observational cosmology."

http://arxiv.org/abs/1002.0525

Title: Angular size test on the expansion of the Universe

Author: Martín López-Corredoira

Although we tend as a matter of expedience to stay away from purely theoretical cosmological conjectures, I felt the following paper was worth mentioning. It is a strictly closed solution to General Relativity. Quote: *"A new speculative model for the expansion of our universe has been under development by the author for the last two decades, which correctly predicts astronomical measurements with no dark matter or dark energy. This new closed model (no free parameters) correctly predicts that time increases without limit into the future. By contrast, a seldom mentioned future-problem in relativity theory is shown in this paper. Any acceleration of the expansion rate of our universe destroys the proper behavior of time into the future. The goal of this paper is to present this problem of relativity theory and remind the reader of the success of the new model."*

[218]gen-phys arXiv:1002.2932

Title: Decelerated expansion or Future time comes to a halt

Authors: Charles B. Leffert

The lithium problem once again rears its head. Again, we ponder the true meaning of "non-standard Big Bang nucleosynthesis." Quote:

"The nuclei of the lithium isotopes are fragile, easily destroyed, so that, at variance with most of the other elements, they cannot be formed in stars through steady hydrostatic nucleosynthesis. The 7Li isotope is synthesized during primordial nucleosynthesis in the first minutes after the Big Bang and later by cosmic rays, by novae and in pulsations of AGB stars (possibly also by the "nu" process). 6Li is mainly formed by cosmic rays. The oldest (most metal-deficient) warm galactic stars should retain the signature of these processes if, (as it had been often expected) lithium is not depleted in these stars... On the other hand, possibilities of lower productions of 7Li in the standard and/or non-standard Big Bang nucleosynthesis are briefly evoked. A surprisingly high value (A(6Li)=0.8 dex) of the abundance of the 6Li isotope has been found in a few warm metal-poor stars. Such a high abundance of 6Li independent of the mean metallicity in the early Galaxy cannot be easily explained. But are we really observing 6Li ?"

http://arxiv.org/abs/1002.10041

Title: Li isotopes in metal-poor halo dwarfs, a more and more complicated story

Authors: Monique Spite, François Spite

The orthodox view of galaxy evolution is becoming more accommodating of the Arp and Narlikar hypothesis that QSOs are proto-galaxies emerging from AGN. Quote:

"We discuss evidence that quasars, and more generally radio jets, may have played an active role in the formation stage of galaxies by inducing star formation, i.e. through positive feedback. This mechanism first proposed in the 70's has been considered as anecdotic until now, contrary to the opposite effect that is generally put forward, the quenching of star formation in massive galaxies to explain the galaxy bimodality, downsizing and the universal black hole mass over bulge stellar mass ratio. This suggestion is based on the recent discovery of an ultra-luminous infrared galaxies, i.e. an extreme starburst, which appears to be triggered by a radio jet from the QSO HE0450-2958 at z=0.2863, together with the finding in several systems of an offset between molecular gas and quasars, which may be explained by the positive feedback effect of radio jets on their local environment."

[200] arXiv:1002.1260

Title: The role of quasars in galaxy formation

Authors: D.Elbaz

Supernovae

The following is interesting not so much because of the model it proposes but because of the tacit admission it carries that 1A SNe are greatly diverse phenomena, making their classification as standard candles a dubious proposition.

[434] arXiv:1002.2505

Title: Modeling the Diversity of Type Ia Supernova Explosions

Authors: F. K. Roepke, W. Hillebrandt, D. Kasen, S. E. Woosley

COBE, WMAP, & PLANCK

Stephen Crothers has published an article in Electronics World on the quality of data obtained from the COBE and WMAP missions. He puts the pioneering work of Pierre-Marie Robitaille into focus.

http://viewer.zmags.com/publication/a8568038

Title: COBE and WMAP: Signal Analysis by Fact or Fiction?

Author: Stephen J. Crothers

These are two recent papers by Prof Robitaille extending his earlier work on COBE and WMAP to the PLANCK mission:

http://www.ptep-online.com/index_files/2010/PP-22-01.PDF

Title: Calibration of Microwave Reference Blackbodies and Targets for Use in Satellite Observations: An Analysis of Errors in Theoretical Outlooks and Testing Procedures

Author: Pierre-Marie Robitaille

http://www.ptep-online.com/index_files/2010/PP-22-02.PDF

Title: The Planck Satellite LFI and the Microwave Background: Importance of the 4K Reference Targets

Author: Pierre-Marie Robitaille

Here is yet another WMAP analysis that uses the word "anomalous" in the title. Note that it anticipates Planck results, which are largely debunked by the previous contributions. Quote:

"We have investigated non-Gaussianity of our early Universe by comparing the parity asymmetry of the WMAP power spectrum with simulations. We find that odd-parity preference of the WMAP data (2<= l <=18) is anomalous at 4-in-1000 level. We find it likely that low quadrupole power is part of this parity asymmetry rather than an isolated anomaly. Further investigation is required to find out whether the origin of this anomaly is cosmological or systematic effect. The data from Planck surveyor, which has systematics distinct from the WMAP, will help us to resolve the origin of the anomalous odd-parity preference."

http://arxiv.org/abs/1001.4613

Title: Anomalous parity asymmetry of the WMAP power spectrum data at low multipoles

Authors: Jaiseung Kim, Pavel Naselsky

"We report the detection of 21-cm and H2 absorption lines in the same DLA system (log N(HI)=21.36+-0.10) at zabs=3.17447 towards SDSSJ133724+315254 (z=3.174). We estimate the spin temperature of the gas to be, Ts~600 K, intermediate between the expected values for cold and warm neutral media. This suggests that the HI absorption originates from a mixture of different phases… The VLT/UVES spectrum reveals another DLA at zabs=3.16768 with log N(HI)=20.41+-0.15 and low metallicity, [Si/H]=-2.68+-0.11. We derive log N(DI)/N(HI)=-(4.93+-0.15) in this system. This is a factor of two smaller than the value expected from the best fitted value of Omega_b from the WMAP 5 yr data. This confirms the presence of astration of deuterium even at very low metallicity."

http://arxiv.org/abs/1002.4620

Title: Detection of 21-cm, H2 and Deuterium absorption at z>3 along the line-of-sight to J1337+3152

Authors: R. Srianand, N. Gupta, P. Petitjean, P. Noterdaeme, C. Ledoux

Analysis of WMAP data consistently reveals anisotropy and asymmetry where there should be none. Quote: *"We confirm an excess of power in temperature angular power spectrum in the Southern hemisphere at a significant level, between 3 'sigma' and 4 'sigma' depending on the exact range of multipoles considered. We find a milder excess of power in the gradient (curl)*

component EE (BB) of polarized angular spectra in the Northern (Southern) hemisphere: this asymmetry is less significant level than the temperature one, and is evident only at low multipoles where the signal-to-noise ratio is larger."

[799] arXiv:1002.4745

Title: Power Asymmetries in the Cosmic Microwave Background Temperature and Polarization patterns

Authors: F. Paci, A. Gruppuso, F. Finelli, P. Cabella, A. De Rosa, N. Mandolesi, P. Natoli

It appears that effects emulating the S-Z effect are present in the WMAP anisotropies. If they are indeed pseudo S-Z effects, possibly emanating from the galactic foreground, then a great deal of WMAP analysis is open to speculation.

[820] arXiv:1002.4872

Title: Evidence for a Galactic Sunyaev-Zel'dovich-like Signal in WMAP Data

Authors: Shahab Joudaki, Joseph Smidt, Alexandre Amblard, Asantha Cooray

Title of the month

Whilst scanning arXiv titles at supersonic speeds, I misread the tile of the following paper. For *"le Mans"*, I read *"Mars"*, and leapt from my chair in dismay. My bad! Stand down.

[12] gen-phys arXiv:1002.0151

Title: Study of the Urban Road Networks of Le Mans

Authors: J. Jiang, et al.