



# ALTERNATIVE COSMOLOGY GROUP

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## The Alternative Cosmology Group Newsletter - August 2009

The ACG newsletter is distributed gratis to subscribers. Get onto our mailing list without obligation at [www.cosmology.info/newsletter](http://www.cosmology.info/newsletter). The current newsletter is a review of 1062 papers published under astro-ph, together with 426 under gen-physics on arXiv for the month of July, 2009. Now added are papers archived in [www.vixra.org](http://www.vixra.org). If you would like to suggest papers for inclusion, please send the arXiv or vixra reference and a brief exposition to Hilton Ratcliffe ([hilton@hiltonratcliffe.com](mailto:hilton@hiltonratcliffe.com)).

This month we make our first reference to a vixra paper. A quick review of the papers listed there reveals two things: Firstly, there has been an amazing growth in support for the site. At the time of going to press, there were 123 papers listed in 19 categories. Secondly, as may have been expected, there is a disappointing lack of professionalism and polish in many of the papers. Phil Gibbs is going to have to get on top of that if his archive is to be taken seriously.

There have been a number of responses to last month's newsletter, particularly with regard to the difficulties we experience in presenting a representative sample of non-aligned results each month. We have introduced several changes which will make the newsletter more compact, easy to read, and hopefully contain all the information it should. However, we still have the challenge of not missing relevant publications. For purely practical reasons, we are limiting our monthly search to the categories of astro-ph and gen-ph, and we rely on readers to point us towards publications placed elsewhere. We appeal to authors to label their works with titles that give the necessary clues to those of us who must find jam in the doughnut with only a swift scan of titles as first approach. We are grateful to Max Wallis of Cardiff University for letting us know about Trevor Marshall's contribution on Black Holes (below). We probably would never have picked it up, for two reasons: Firstly, the title doesn't ring many bells for us; and secondly, it is archived under gr-qc. Please continue to send us this sort of information. Although we can't promise to feature everything, it does make our job that much easier.

**Title: The gravitational collapse of a dust ball**

Authors: [Trevor W. Marshall arXiv:0907.2339](http://arxiv.org/abs/0907.2339)

## **Gravitational lensing**

One of the common rebuttals raised against Arp's quasar associations is that of gravitational lensing. The QSOs "encircling" Seyfert galaxies are proposed as multiple lensed images of a single remote background quasar. Arp and Lopez-Corredoira have independently found that the suggestion is fallacious, in the cases of their own observations at least. Nevertheless, the idea is pursued vigorously in the literature, and this study from the University of Sydney is an example. Several questions in respect of microlensed quasars raise themselves to the objective investigator, especially that the multiple images should all have identical optical properties if they are indeed renditions of the same source object. The authors seem to suggest an answer to why they are not: *"However, while the combination of deflections due to individual stars [in the lens—ed.] is linear, the resulting magnifications are highly non-linear, leading to significant computational challenges..."* They state further problems: *"Several quasar systems seem to possess anomalous flux ratios ... meaning that observed image brightnesses differ significantly from predictions drawn from gravitational lens models..."* Predictably, they solve their quandaries with Dark Matter: *"Two key hypotheses have been put forward to explain these observations; either these are anomalous ratios due to millilensing ... by clumps of dark matter in the halo of the lensing galaxy, or the quasars are microlensed by stars embedded in an overall smooth dark matter distribution."* The *ad hoc* patches started with lensing, followed by microlensing to explain anomalies, now millilensing. Of course, the possibility that the model is refuted by observation is not considered.

### **[23] Title: Gravitational Microlensing: A parallel, large-data implementation**

Authors: [Hugh Garsden](#), [Geraint F. Lewis arXiv:0907.0068](#)

## **Black Holes**

These results make a compelling case for stellar, that is relatively local, sources of GRBs, thus obviating the need to invoke Black Holes. *"Our correlation analysis of Swift gamma-ray burst coordinates and nearby star locations (catalog Gliese) reveals 4 coincidences with angular accuracy better than 0.1 degree. The random probability is  $2 \times 10^{-4}$ , so evidencing that coincident stars are indeed gamma-ray burst sources. The fifth coincident gamma-burst could be added (angular accuracy 0.14 degree) with random probability for 5 events  $10^{-5}$ ."*

### **[46] Title: Stellar Sources of Gamma-Bursts**

Authors: [B.I.Luchkov arXiv:0907.0194](#)

## **Compton interactions**

Inelastic collisions in intergalactic and interstellar space are important to those of us researching energy transfer mechanisms, particularly cosmological redshift. With increasing discovery of natural lasers, the interactions with plasma are of special interest.

[7] gen-ph **Title: Inelastic collisions of relativistic electrons with atomic targets assisted by a laser field**

Authors: [A.B.Voitkiv](#), [B.Najjari](#), [J.Ullrich](#) [arXiv:0907.0074](#)

Closely related is this study using frequency combs, a field being actively pursued by Louis Marmet and Chuck Gallo.

[11] gen-ph **Title: Frequency Comb Assisted Diode Laser Spectroscopy for Measurement of Microcavity Dispersion**

Authors: [P. Del'Haye](#), [O. Arcizet](#), [M.L. Gorodetsky](#), [R. Holzwarth](#), [T.J. Kippenberg](#) [arXiv:0907.0143](#)

## **CMBR & WMAP**

Liu and Li have posted another paper, arXiv 0907.2731, where they apply their own processing to the WMAP raw data. While the result does not in fact resolve all the problems—there is still an observation number correlation—it does eliminate some of the errors these authors had pointed out in the WMAP team’s work. What is most notable about the new map produced is that the quadrupole anisotropy, which was “too low” for LCDM predictions in the WMAP team’s work, now drops by almost another order of magnitude. The quadrupole in this analysis is 60 times smaller than that predicted by LCDM—not a small difference. If one argues that there is considerable cosmic variance to be expected, it still is an amazing coincidence, that by some cosmic accident the quadrupole should be so neatly cancelled. Since greatly reducing a variance of anything is very difficult to do in error—errors almost always increase variances—this cancellation is also evidence that Liu and Li’s work is valid. The work also affects the LCDM prediction from the power spectrum of the baryon density, as shown in Table 2. Liu and Li don’t go into this, but of course this density is connected with the BBN predictions of the abundance of Li and D. The shift makes the prediction of Li 40% higher, making the discrepancy with observation highlighted in the press release still worse. The prediction of D is reduced by 25%, which is less dire for LCDM, but does move the prediction away from the current average of D measurements in quasars.

### **[482] Title: Improved CMB Map from WMAP Data**

Authors: [Hao Liu](#), [Ti-Pei Li](#) [arXiv:0907.2731](#)

Searching for the S-Z effect in WMAP data is not the most fruitful exercise, requiring a deal of manipulation to contrive a fit, as Diego and Partridge discovered: *“From the comparison we conclude that the observed SZE seems to be less than the expected signal derived from X-ray measurements when a standard  $\beta$ -model is assumed for the gas distribution. This conclusion is model dependent. Our predictions depend mostly on the assumptions made about the core radius of clusters and the slope of the gas density profile. Models with steeper profiles are able to simultaneously fit both X-ray and WMAP data better than a  $\beta$ -model. However, the agreement is not perfect and we find that it is still difficult to make the X-ray and SZE results agree.”*

### **[54] Title: The Sunyaev-Zel'dovich effect in WMAP data**

Authors: [J.M Diego](#), [B. Partridge](#) [arXiv:0907.0233](#)

## **Anomalous acceleration**

John Hodge suggests that his model correctly explains the so-called Pioneer Anomaly.

[27] gen-ph **Title: Comments on "The Pioneer Anomaly in the Light of New Data"**

Authors: [John C. Hodge arXiv:0907.0425](#)

## **Cosmic fractals**

Cosmic fractals have come a long way since the original work by Benoit Mandelbrot. Grujic and Pankovic give their take on large-scale fractals.

[136] gen-ph **Title: On the Fractal Structure of the Universe**

Authors: [P V Grujic](#), [V D Pankovic arXiv:0907.2127](#)

## **Supernovae**

Kasen, Roepke, and Woosley may have inadvertently posed a strong argument against the classification of 1A SNe as standard candles, and at the same time related light curve properties to the actual explosive mechanism itself, rather than the creation of intervening spacetime. We assume from their conclusions that this was not their intention. To be published in *Nature*.

**[143] Title: The Diversity of Type Ia Supernovae from Broken Symmetries**

Authors: [Daniel Kasen](#), [Fritz Roepke](#), [S.E. Woosley arXiv:0907.0708](#)

## **Mathematical Physics**

In this interesting slant on physical effects of mathematical statements, Dr Comay predicts that the Higgs boson will not be found.

[352]gen-ph **Title: Physical Consequences of Mathematical Principles**

Authors: [E. Comay arXiv:0907.5502](#)

## **Redshift**

This is our first reference to viXra. After being summarily rejected by arXiv, this summary of anomalous redshift results was listed on viXra without any trouble. A shortened version of this paper was presented by the author at the 2<sup>nd</sup> Crisis in Cosmology Conference (CCC2) in Port Angeles, WA, in September 2008.

**[1] Title: A Review of Anomalous Redshift Data**

Authors: [Hilton Ratcliffe viXra:0907.0003](#)

## **Title of the Month**

The classic movie line “*I love the smell of napalm in the morning*” is in danger of being co-opted to a revival of Star Trek:

### **Title: The Aromatic Features in Very Faint Dwarf Galaxies**

Authors: [Ronin Wu](#) [David W. Hogg](#) [John Moustakas](#)

*Honourable Mention* goes to this effort, although it’s hard to see the effect anywhere near the battleground of cosmology:

### **Title: The Peace Mediator Effect**

Authors: [Andrea Guazzini](#), [Graziano Barnabei](#), [Timoteo Carletti](#), [Franco Bagnoli](#), [Daniele Vilone](#)