

Curriculum Vitae – Helen Buttery

Personal Details

Name	Helen Jane Buttery.
Occupation	Assistant editor for Advanced Materials, Wiley-VCH.
Location	Boschstrasse 12 69469 Weinheim Germany
Date of Birth	18 December 1976.
Nationality	British Citizen.

Qualifications

PhD in Astrophysics <i>New methods for detecting high-redshift clusters of galaxies</i>	Cambridge University	2004	
MSci in Physics	Cambridge University	1999	2:1
BA (Honours) in Physics	Cambridge University	1998	1st class

Summary of Research Experience

I worked at the Osservatorio Astrofisico di Arcetri, where I am carrying out multiwavelength studies of the emission from distant galaxies. This involved a search for z' -dropout sources at $z \sim 7$ using the multiwavelength data from the GOODS surveys, as well as working on the mosaicing of the J - and Ks -band New Technology Telescope (NTT) maps of the ELIAS-S1 field.

Between 2000 and 2004 I completed a PhD at the Cavendish Astrophysics Group at Cambridge University, UK. My PhD involved imaging clusters of galaxies using the Sunyaev-Zel'dovich (SZ) effect (the inverse-Compton scattering of the cosmic microwave background by a cluster plasma), and using statistical overdensities of radiosources in the Sydney University Molonglo Sky Survey (SUMSS) as high-redshift cluster indicators. During the course of my PhD I carried out radio-band SZ observations; I produced simulations of the Arcminute Micro-Kelvin Imager (AMI), the new SZ telescope at Cambridge; I analyzed data from the SUMSS radio catalogue and I undertook radio, infrared and optical observations.

Computer Programming

My PhD and post-doc work has required a large amount of software development. My recent work has created a J - and K -band source catalogue from NTT observations of the ELAIS-S1 field. I have also carried out statistical analysis on the data. In addition, I created catalogues from GOODS field infrared observations and in combination with the GOODS optical catalogues used the data to search for z -band dropouts ($z = 7$ galaxies). During my PhD I carried out statistical analysis of radio catalogues in order to find statistically significant overdensities. I

also created catalogues from optical and infrared images and used the data to search for galaxies of similar colours (and therefore at similar photometric redshifts).

I have two years experience of C, two years experience of Perl as well as several years experience of Fortran 90 (and 77). I have a few months experience of IDL. I am familiar with HTML and LaTeX. I have used many different astronomical software packages including AIPS, miriad, iraf, DS9, karma, SExtractor and HyperZ.

Languages

My native language is English. I have A-level French (A grade) and GCSE German (A grade). I know some Dutch (having lived there for one year) and have a good knowledge of Italian (having lived there for two years). I am currently learning more German.

Papers and Conference Proceedings

Most of these papers can be downloaded from

<http://www.geocities.com/helenbuttery/Work/papers.html>

A Near-IR survey of the ELAIS-S1 field Buttery, H. J., Dias, J. E., Cimatti, A., Maiolino, R., Marconi, A., in prep.

Evidence for strong evolution of the cosmic star formation density at high redshifts Mannucci, F., Buttery, H., Maiolino, R., Marconi, A., Pozzetti, L. 2007, A&A, 461, 423. astro-ph/0607143

The XMM-Newton survey of the ELAIS-S1 field. I. Number counts, angular correlation function and X-ray spectral properties Puccetti, S., Fiore, F., D'Elia, V., Pillitteri, I., Feruglio, C., Grazian, A., Brusa, M., Ciliegi, P., Comastri, A., Gruppioni, C., Mignoli, M., Vignali, C., Zamorani, G., La Franca, F., Sacchi, N., Franceschini, A., Berta, S., Buttery, H., Dias, J. E. 2006, A&A, 457, 501. astro-ph/0607107

The ESO-Spitzer Imaging extragalactic Survey (ESIS). I. WFIB, V, R deep observations of ELAIS-S1 and comparison to Spitzer and GALEX data Berta, S., Rubele, S., Franceschini, A., Held, E. V., Rizzi, L., Lonsdale, C. J., Jarrett, T. H., Rodighiero, G., Oliver, S. J., Dias, J. E., Buttery, H. J., Fiore, F., La Franca, F., Puccetti, S., Fang, F., Shupe, D., Surace, J., Gruppioni, C. 2006, A&A, 451, 881. astro-ph/0602252 vspace0.2cm

Searching for clusters with SUMSS, Buttery, H. J., Cotter, G., Hunstead, R. W., Sadler, E. M. 2003, New Astronomy Reviews, Volume 47, Issue 4-5, p. 329-332. astro-ph/0302390

SUMSS: A wide-field radio imaging survey of the southern sky. II. The Source Catalogue, Mauch, T., Murphy, T., Buttery, H. J., Curran, J., Hunstead, R. W., Piestrzynski, B., Robertson, J. G., Sadler, E. M. 2003, MNRAS, 342, 1117.

SUMSS - Exploring the Faint Radio Sky, Mauch, T., Murphy, T., Buttery, H. J., Curran, J., Hunstead, R. W., Piestrzynski, B., Robertson, J. G., Sadler, E. M. 2003, Maps of the Cosmos, International Astronomical Union. Symposium no. 216, held 14-17 July, 2003 in Sydney, Australia, IAUS, 216E, 163M

High-Z Clusters Traced by Groups of Radiosources, Cotter, G., Buttery, H. J., Croft, S., Hill, G. J., Hunstead, R. W., Rawlings, S., Sadler, E. M. 2003, The Cosmic Cauldron, 25th meeting of the IAU, Joint Discussion 10, 18 July 2003, Sydney, Australia, IAUID, 10E, 72C

Sydney University Molonglo Sky Survey (SUMSS), Mauch, T., Murphy, T., Buttery, H. J., Curran, J., Hunstead, R. W., Piestrzynski, B., Robertson, J. G., Sadler, E. M. 2003, VizieR On-line Data Catalog: VIII/70A.

Early optical emission from the gamma-ray burst of 4 October 2002, Fox, D. W., Yost, S., Kulkarni, S. R., Torii, K., Kato, T., Yamaoka, H., Sako, M., Harrison, F., A., Sari, R., Price, P. A., Berger, E., Soderberg, A. M., Djorgovski, S. G., Barth, A. J., Pravdo, S. H., Frail, D. A., Gal-

- Yam, A., Lipkin, Y., Mauch, T., Harrison, C., Buttery, H. 2003, *Nature*, 422, 284.
- ATCA imaging of Clusters of Galaxies found in SUMSS* Buttery, H. J., Cotter, G., Hunstead, R. W., Sadler, E. M. Feb 2003, ATNF News, Issue no. 48.
- Absorption Redshift*, Fox, D. W., Barth, A. J., Soderberg, A. M., Price, P. A., Buttery, H., Mauch, T. 2002, GRB Circular Network, 1569, 1
- Searching for Clusters with SUMSS*, Buttery, H. J., Cotter, G., Hunstead, R. W., Sadler, E. M. 2003, *RevMexAA (SC)*, vol. 17, eds. V. Avila-Reese, C. Firmani, C.S. Frenk & C. Allen.
- Searching for Clusters of Galaxies with SUMSS*, Buttery, H. J., Cotter, G., Hunstead, R. W., Sadler, E. M. 2002, *A New Era in Cosmology*, ASP Conference Proceedings, Vol. 283. Edited by Nigel Metcalfe and Tom Shanks. ISBN: 1-58381-126-5. San Francisco: Astronomical Society of the Pacific, 2002., p.245 ,nec conf 245B. astro-ph/0112129
- Dealing with point source contamination in AMI Cluster Surveys*, Buttery, H. Clusters of galaxies and the high redshift universe observed in X-rays, Recent results of XMM-Newton and Chandra, XXXVIth Rencontres de Moriond, XXIst Moriond Astrophysics Meeting, March 10-17, 2001 Savoie, France. Edited by D.M. Neumann & J.T.T. Van. 2001, cghr confE 3B.
- Detection of a CMB decrement towards a cluster of distant mJy radiogalaxies*, Cotter, G., Buttery, H., Croft, S., Rawlings, S., Hill, G., Das, R., Grainge, K., Grainger, W.F., Jones, M., Pooley, G.G., Saunders, R. 2002, *MNRAS*, 331, 1C.
- Observations of the Sunyaev-Zel'dovich effect in the $z = 0.78$ cluster — MS1137.5+6625*, Cotter, G., Buttery, H., Das, R., Jones, M., Grainge, K., Grainger, W.F., Pooley, G.G., Saunders, R. 2002, *MNRAS*, 334, 323C.