

## Curriculum Vitae for ADAM R. FOSTER

Smithsonian Astrophysical Observatory, 60 Garden St MS-67, Cambridge, MA 02138, USA

### PROFFESIONAL PREPARATION

University of Strathclyde, Glasgow, UK	MSci Physics	2004
University of Strathclyde, Glasgow, UK	PhD Physics	2009
Smithsonian Astrophysical Observatory, Cambridge, MA	Postdoctoral Fellow	2009-2012

### APPOINTMENTS

Smithsonian Astrophysical Observatory, Cambridge, MA	Astrophysicist	2012-Present
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### PRODUCTS

- “Fe IX Calculations for the Solar Dynamics Observatory”, A. R. Foster and P. Testa, *ApJL*, **740** 52 (2011)
- “Updated Atomic Data and Calculations for X-ray Spectroscopy”, A. R. Foster, L. Ji, R. K. Smith, N. S. Brickhouse, *ApJ*, **756** 128 (2012)
- AtomDB, the atomic database for X-ray astronomy, [www.atomdb.org](http://www.atomdb.org), A. R. Foster, R. K. Smith, N. S. Brickhouse
- “Resolving the Origin of the Diffuse Soft X-ray Background”, R. K. Smith, A. R. Foster, R. J. Edgar, N. S. Brickhouse, W. T. Sanders, *Submitted to ApJ* Oct 2013
- “Elemental Abundances in the Possible Type Ia Supernova Remnant G344.7-0.1”, H. Yamaguchi, M. Tanaka, K. Maeda, P. O. Slane, A. Foster, R. K. Smith, S. Katsuda, R. Yoshii, *ApJ*, **749** 137 (2012)
- “Global Modeling of X-ray Spectra Produced in O-Type Star Winds”, A. Herv, G. Rauw, Y. Naz, A. Foster, *ApJ* **748** 89 (2012)
- “The Challenges of Plasma Modeling: Current Status and Future Plans”, A. R. Foster, R. K. Smith, N. S. Brickhouse, T. R. Kallman, M. C. Witthoef *Space Science Reviews* **157** 135 (2010)
- “On the Behaviour and Radiating Properties of Heavy Elements in Fusion Plasmas”, A. R. Foster, PhD Thesis, University of Strathclyde. Online at [http://www.adas.ac.uk/theses/foster\\_thesis.pdf](http://www.adas.ac.uk/theses/foster_thesis.pdf) (2009)
- “High-Resolution XMM-Newton Spectroscopy of the Cooling Flow Cluster A3112”, G. E. Bulbul, R. K. Smith, A. Foster, J. Cottam, M. Loewenstein, R. Mushotzky, R. Shafer, *ApJ* **747** 32 (2012)

### RESEARCH ACTIVITIES

- *The AtomDB Database*: I am the main curator of the AtomDB database, which is a large database of atomic data used in calculating spectra of astrophysical objects. I work closely with modelers to ensure that the data is presented in as useful a way as possible, including integration in modeling software. As of November 2013, the main papers describing the database have over 800 citations.
- *Model development*: I have developed new models which utilize the AtomDB database (or extensions thereof) and made them available to the public through the XSPEC software. Notably, these include a charge exchange model and a non-equilibrium ionization model.
- *Undergraduate Education*: In summer 2013, I mentored an undergraduate student as part of the NSF’s REU program.
- *Outreach*: I work with elementary and high school children to encourage engagement with mathematics and science as a director of the Somerville Mathematics Fund (<http://www.somervillemathematicsfund.org/>).