

## Stuart Anthony Gilchrist

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### Current position

2015-: Postdoctoral Research Scientist, North West Research Associates (NWRA),  
Boulder, Colorado, USA

### Former positions

2014-2015: Postdoctoral Research Scientist, LESIA, l'Observatoire de Paris, Meudon, France

### Academic qualifications

2008: B.Sc (Advanced), The University of Sydney, Majors: Physics, Mathematics

2009: B.Sc (Advanced), The University of Sydney, Honours I in Physics

2014: D.Phil, The University of Sydney, Physics

Thesis: Data-Driven Numerical Modelling of the Solar Coronal Magnetic Field

### Journal papers

1. **Gilchrist, S.A.**, Braun, D.C., Barnes, G.: 2016, "A Fixed-point Scheme for the Numerical Construction of Magneto-hydrostatic Atmospheres in Three Dimensions", *Solar Physics*, in press.
2. Zuccarello, F.P., Aulanier, G., **Gilchrist, S.A.**: 2016, "The apparent critical decay index at the onset of solar prominence eruptions", *The Astrophysical Journal Letters*, **821**, L23.
3. Zhao, J., **Gilchrist, S.A.**, Aulanier, G., Schmieder, B., Pariat, E., Li, H.: 2016, "Hooked flare ribbons and flux-rope related QSL footprints", *The Astrophysical Journal*, **832**, 62.
4. Zuccarello, F.P., Aulanier, G., **Gilchrist, S.A.**: 2015, "Critical decay index at the onset of solar eruptions", *The Astrophysical Journal*, **814**, 15.
5. DeRosa, M.L., Wheatland, M.S., Leka, K.D., Barnes, G., Amari, T., Canou, A., **Gilchrist, S.A.**, Thalmann, J.K., Valori, G., Wiegmann, T., Schrijver, C.J., Malanushenko, A., Sun, X., Régnier, S.: 2015, "The Influence of Spatial Resolution on Nonlinear Force-Free Modeling", *The Astrophysical Journal*, **811**, 107.
6. **Gilchrist, S.A.**, Wheatland, M.S.: 2014, "Nonlinear force-free modeling of the corona in spherical coordinates", *Solar Physics*, **289**, 1153.
7. **Gilchrist, S.A.**, Wheatland, M.S.: 2013, "A Magnetostatic Grad-Rubin Code for Coronal Magnetic Field Extrapolations", *Solar Physics*, **282**, 283.
8. Malanushenko, A., Schrijver, C. J., DeRosa, M. L., Wheatland, M. S., **Gilchrist, S. A.**: 2012, "Guiding Nonlinear Force-Free Modeling Using Coronal Observations: First Results using a Quasi Grad-Rubin Scheme", *The Astrophysical Journal*, **756**, 153.
9. **Gilchrist, S.A.**, Wheatland, M.S., Leka, K.D.: 2012, "The Free Energy of NOAA Active Region AR 11029", *Solar Physics*, **276**, 133.

### Grants and awards

2010-2013: Australian Postgraduate Research Award

2010: William and Catherine McIlrath Scholarship (grants-in-aid)

2009: School of Physics Honours Scholarship

2006: Science Foundation for Physics Scholarship No 1