CURRICULUM VITAE — N. F. H. TOTHILL

Education:

1999: PhD, University of London, United Kingdom.
Research in submillimetre-wave astronomy, in the Department of Physics, Queen Mary & Westfield College.
Thesis entitled *The Structure and Evolution of the Lagoon Nebula: Star Formation in the Sagittarius Arm*.

1995: MSc in Radio Astronomy, University of Manchester, United Kingdom.
Courses and research undertaken at Nuffield Radio Astronomy Laboratories, Jodrell Bank.
Thesis entitled *Polarimetry of 22 GHz Water Masers in W3(OH)*.

1993: BA in Natural Sciences, University of Cambridge, United Kingdom.
Natural Sciences Tripos (Part II: Physics & Theoretical Physics), Corpus Christi College.

Appointments:

2006 October –; University of Exeter, School of Physics:
Research Fellow with Prof. Mark McCaughrean.
Responsibilities: Research in Antarctic Astronomy, Independent research.

2005 September – 2006 September; Smithsonian Astrophysical Observatory:
Astronomer, reporting to Dr. Adair Lane.
Responsibilities: Operation of AST/RO, Data Reduction and Analysis; Decommissioning of AST/RO on-site; Independent Research.

2003 November – 2004 October; Amundsen-Scott South Pole Station, Antarctica:
AST/RO Winterover scientist-in-residence and Station Science Leader.
Responsibilities: Scheduling, operation and maintenance of AST/RO, commissioning of SPIFI, coordination of requirements for all science projects with station management.

2002 October – 2003 January; Amundsen-Scott South Pole Station, Antarctica: AST/RO Winterover-in-training

2002 September – 2005 August; Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.:
Research Fellow, AST/RO project, with Dr. Tony Stark and Dr. Adair Lane.

2000–2001; Department of Astronomy & Physics, Saint Mary's University, Halifax, Nova Scotia:
Part-time Faculty.

1999 March – 2002 August; Department of Astronomy & Physics, Saint Mary's University, Halifax, Nova Scotia:
Postdoctoral Research Associate with Dr. George Mitchell.
Responsibilities: Data reduction and Analysis for the ODIN satellite mission; Independent Research.

1995 September – 1999 February; Dept. of Physics, Queen Mary & Westfield College, London, U.K.:
Research Student with Prof. Glenn White (now at the Open University and Rutherford Appleton Lab).

1994 September – 1995 August; Nuffield Radio Astronomy Laboratories, Jodrell Bank, U.K.:
Graduate student with Dr. Jim Cohen.

1993 September – 1994 August; Max-Planck-Institut für Astronomie, Heidelberg, Germany:
Visiting Researcher with Dr. Mark McCaughrean.
Responsibilities: Near-IR data reduction and analysis, near-IR observing.

1992 July – August; Royal Observatory, Edinburgh, U.K.: Summer Student with Dr. Ray Wolstencroft.
Responsibilities: Reduction and analysis of optical spectra of IR-excess stars.

Professional Service, Memberships, Awards:

2008: SOC & LOC for Exeter workshop on optical/IR telescopes at Dome C.
2007: SOC for *Submm/THz/FIR Astronomy from Antarctica* (Saclay, June 2007), and *Site-Testing from Dome C* (Frascati, June 2007).
2002–: Reviewer for *Publications of the Astronomical Society of Australia* and *Astrophysical Journal*.
1997–: Reviewed JCMT observing proposals for UK and Canadian time allocation groups.

2006–: Member, American Astronomical Society
2003–: Member, International Astronomical Union

2004: Awarded Antarctica Service Medal of the United States
1996: Valerie Myerscough Prize (University of London)

Technical Experience:

2007: Collaborator on PLATO, preHEAT and Gattini, including design, fabrication, assembly, initial test and remote installation.
2003–4: Winterover scientist-in-residence at AST/RO (Antarctic Submillimeter Telescope and Remote Observatory), Amundsen-Scott South Pole Station, Antarctica.
Observing with, and maintaining, heterodyne and bolometer receivers.
Maintenance and repair of general telescope systems.
Maintenance and administration of computer systems.

2002–3: Training for AST/RO winterover at: AST/RO, HHT (Mt. Graham), CSO.

1998–2002: Observations at the following mm/sub-mm telescopes:
JCMT, IRAM 30 m (Pico Veleta), HHT, SEST, FCRAO
Observations with heterodyne and bolometer instrumentation.

1994–2001: Observations with near-IR cameras on the following telescopes: 2.2 m, Calar Alto, Spain; 2.2 m, La Silla, Chile; 1.5 m, Mt. Bigelow, Arizona.

External Funding:

2006–8: Marie Curie International Reintegration Grant under FP6 (MIRG-CT-2006-044961); Eur 80K.

Teaching Experience:

2006–: Responsible for teaching observatory: general maintenance, maintenance and upgrading of astronomical performance, assistance with teaching laboratories.
2000–2001: Taught and examined one-semester course in Classical Thermodynamics for second-year undergraduates for two years. Some lecturing in Modern Physics, University Physics, Physics for Life Sciences, Stars and Galaxies (for non-science majors).
1995–1998: Ancillary teaching in Department of Physics, Queen Mary & Westfield College:
Laboratory Demonstrator in Optics;
Examples Class Demonstrator in Electric & Magnetic Fields, and in Remedial Mathematics;
Assignment marker in Physics & Astronomy of Stars;
Private Tutoring in basic Quantum Mechanics.

Outreach Experience:

2008–: Invited speaker at local Astronomical Societies.
2006: PBS documentary 'Nova: The Monster of the Milky Way': Assisted with on-site filming in Antarctic.
2001–2: Assistant, Observatory tours for the general public on the St Mary's University campus.
2000–2: Worked with the External Relations department at St Mary's University to publicise ODIN, resulting in a front-page article in the *Halifax Chronicle-Herald*; appeared on both local and national television (CTV) to discuss general astronomical topics.
1997: 'Researcher in Residence' at Hundred of Hoo School, Kent, U.K., under the Pupil Researcher Initiative.

Selected Publications:

Tothill, N. F. H., Gagné, M., Stecklum, B., and Kenworthy, M. A. 2008, 'The Vicinity of the Lagoon Nebula', in *Handbook of Star Formation*, B. Reipurth, ed., in press.

Tothill, N. F. H., Martin, C. L., Kulesa, C. A., and Briguglio, R. 2008, 'Does your Robot need a Flamethrower? Automated astronomical instrumentation in Antarctica', *Astr. Nachr.* 329, 326.

Oberst, T. E., Parshley, S. C., Stacey, G. J., Nikola, T., Löhr, A., Harnett, J. I., **Tothill, N. F. H.**, Lane, A. P., Stark, A. A., and Tucker, C. R. 2006, 'Detection of the 205 μm NII Line from the Carina Nebula', *Astrophys. J.*, **652**, L125–L128.

Hjalmarson, Å., Frisk, U., Olberg, M., Bergman, P., Bernath, P., Biver, N., Black, J. H., Booth, R. S., Buat, V., Crovisier, J., Curry, C. L., Dahlgren, M., Encrenaz, P. J., Falgarone, E., Feldman, P. A., Fich, M., Florén, H. G., Fredrixon, M., Gerin, M., Gregersen, E. M., Hagström, M., Harju, J., Hasegawa, T., Horellou, C., Johansson, L. E. B., Kyrölä, E., Kwok, S., Larsson, B., Lecacheux, A., Liljeström, T., Lindqvist, M., Liseau, R., Llewellyn, E. J., Mattila, K., Mégie, G., Mitchell, G. F., Murtagh, D., Nyman, L.-Å., Nordh, H. L., Olofsson, A. O. H., Olofsson, G., Olofsson, H., Pagani, L., Persson, G., Plume, R., Rickman, H., Ristorcelli, I., Rydbeck, G., Sandqvist, Aa., von Schéele, F., Serra, G., Torchinsky, S., **Tothill, N. F. H.**, Volk, K., Wiklind, T., Wilson, C. D., Winnberg, A., and Witt, G. 2003, 'Highlights from the first year of Odin observations', *Astron. Astrophys.*, **402**, L39–L46.

Tothill, N. F. H., White, G. J., Matthews, H. E., McCutcheon, W. H., McCaughrean, M. J., and Kenworthy, M. A. 2002, 'Structure and Evolution of the Lagoon Nebula. I. Submillimeter Continuum and CO Line Mapping', *Astrophys. J.*, **580**, 285–304.

Miskolczi, B., **Tothill, N. F. H.**, Mitchell, G. F., and Matthews, H. E. 2001, 'Molecular Gas in NGC 7129', *Astrophys. J.*, **560**, 841–852.

Tothill, N. F. H., and Mitchell, G. F. 2001, 'Gas Temperatures in Orion B North', in Proc. Symposium *The Promise of the Herschel Space Observatory*, G. L. Pilbratt, J. Cernicharo, A. M. Heras, T. Prusti, and R. Harris, eds., ESA SP-460, p. 503.

White, G. J., **Tothill, N. F. H.**, Matthews, H. E., McCutcheon, W. H., Huldtgren, M., and McCaughrean, M. J. 1997, 'Intense molecular emission from the Lagoon nebula, M8', *Astron. Astrophys.*, **323**, 529–533.