University of Birmingham

Professor of Physical Sciences Michael J Church Ph. D., B. Sc., F.R.A.S.

Senior Lecturer

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X-ray Binaries Group
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About

Professor of Physical Sciences Michael J Church is Head of the X-ray Binaries Group at Birmingham working in the fields of neutron star, black hole binaries and Galactic jet sources. He holds a leading position internationally in the fields of absorption dipping, and in the most luminous X-ray binaries having proposed physical models for these sources and for the formation of relativistic jets in neutron star binaries.

Qualifications

- Permanent Title of Professor: State Professorship - award of the Polish State Committee for Titles and Awards awarded by the President of Poland
- Fellow Royal Astronomical Society, elected 1998
- Ph D in Plasma Physics, University of Birmingham, 1975
- B Sc (Hons) in Physics, University of Birmingham 1968

Biography

Professor of Physical Sciences Michael J Church was awarded the degree of Ph D in 1975 in the field of plasma physics. In 1989, in the department of Electron Physics and Space Research he worked on the Spacelab 2 mission in which an X-ray telescope was flown on-board the Space Shuttle.

He was Visiting Professor at the Institute of Space & Astronautical Science (ISAS), Japan (1995), Royal Society Visitor at ISAS (1996-99), invited member of the Beppo-SAX core programme (1997-99); Visiting Astronomer, Laboratory for High Energy Astrophysics, Greenbelt MA (1997); Visiting Astronomer, Space Science division of ESTEC, Holland (1997-2000). In 2000, he became by invitation Professor in High Energy Astrophysics at the Jagiellonian University, Cracow; Professor in the Astronomical Observatory, Cracow (2001-2008); Visiting Professor of the Jagiellonian University (2009-10).

In 2009 he was awarded the permanent title of State Professor by the President of Poland for scientific achievement.

Teaching

- Lecture Course: the Interstellar Medium
- Lecture Course: the Solar Terrestrial Environment
- Critiques: Year 3 and Year 4

Postgraduate supervision

- Supervision of Ph D students in High Energy Astrophysics 1995 onwards

PhD opportunities

Research

RESEARCH THEMES

Low mass X-ray Binaries; absorption dipping in X-ray Binaries; physical models of low mass X-ray binaries including the Z-track sources, the Atoll sources and launching of relativistic jets.

Other activities

- Visiting Professor, Institute for Space and Astronautical Science, Japan
- Visiting Lecturer in High Energy Astrophysics, the Jagiellonian University, Cracow (2000-2010)
- Professor, Astronomical University, Cracow (2000-2008)
- Visiting Professor, Jagiellonian University (2009-10)

- Involved in more than 30 applications for observations with satellite observatories. Member of the Beppo-SAX core programme on the dipping sources
- Supervision and training of Ph D students in the Jagiellonian University, Cracow, 2005 - present

Publications

Selected:

Church M J, Balucinska-Church M., A Complex Continuum Model for the Low Mass X-ray Binary Dipping Sources, A&A, 300, 441, 1995

Balucinska-Church M., Church M. J., Discovery of a Red- and Blue-shifted Iron Disk Line in the Galactic Jet Source GRO J1655-40, MNRAS, 312, L55, 2000

Church M. J., Halai, G. S., Balucinska-Church M., An explanation of the Z-track Sources, A&A, 460, 233, 2006

Balucinska-Church M., Gibiec A., Jackson N. K., Church M. J., On the Nature of the Cygnus X-2 like Z-track Sources, A&A, 512, 9, 2010

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