

# *Curriculum vitae*

## Mark Pearce



### Date and place of birth & citizenship

- 29th March 1970, Great Britain.
- Swedish and British citizenship.

### Affiliation

- KTH, School of Engineering Sciences, Department of Physics, Stockholm, Sweden.
- Contact details: [www.kth.se/profile/pearce](http://www.kth.se/profile/pearce)

### Career history, KTH

- 2020-2024, Deputy Dean, School of Engineering Sciences.
- 2012-2019, Head of Physics Department.
- 2007-, Professor of physics (with specialisation in astroparticle physics).
- 1996-2007, postdoc → assistant professor → associate professor.

### Education

- 2000, *Docent* in Physics, KTH.
- 1996, Ph.D. in Experimental Particle Physics. The University of Birmingham, Great Britain.
- 1992, B.Sc. (hons) in Applied physics. Brunel University, Great Britain.

### Awards and recognition

- 2020, Elected to Physics Class, Royal Swedish Academy of Sciences (KVA). Elected to Nobel Committee for Physics, 2023.
- 2012, Fellow, Institute of Physics.
- 2010, Wallmarkska Prize, KVA. Citation (my translation): *'For his ingenuity in instrument development which has led to prominent new knowledge regarding antimatter in the cosmic radiation'*.
- 2003, Göran Gustafsson small Prize for young researchers.

### Research experience and leadership

After doctoral and postdoctoral positions in CERN-based experimental particle physics experiments, Pearce's research has focused on experimental astro-/astroparticle physics for ~25 years. His research is conducted using satellite- and balloon-borne instrumentation. Past projects include studies of cosmic antiparticles with the PAMELA satellite mission (2006-2017), where he was P.I. for the plastic scintillator anticoincidence shield, and preparation of the CsI(Tl) electromagnetic calorimeter of the Fermi Gamma-ray Space Telescope (2003-2006). Now-a-days, his research focuses on X-ray polarimetry. Pearce was P.I. (2009-2018) for the Sweden-Japan PoGOLite/PoGO+ balloon-borne Compton polarimetry missions (plastic scintillator/BGO-based detector), which made pioneering measurements of Crab and Cygnus X-1 in the hard X-ray band. Since 2018, this work continues with the more sensitive USA-Sweden-Japan XL-Calibur mission,

**Version: November 2024**

where Pearce's group contributes the BGO anticoincidence shield, and plays a central role in data analysis. Pearce was the background simulations working group leader for the ESA M4 X-ray polarimetry mission proposal, XIPE (X-ray Imaging Polarisation Explorer), 2015-2017. He also proposed and led the Phase A study for a national small satellite mission, SPHiNX, for GRB polarimetry (2016-2018). Most recently (2024-), Pearce leads a technology development project for a new type of refractive X-ray optics for astrophysics. On the educational-front, Pearce's group has developed an X-ray detector based on GAGG-scintillators and silicon-photomultipliers for the KTH student CubeSat mission. He previously developed a hand-held cosmic-ray detector for outreach which was operated on the International Space Station by the Swedish astronaut Christer Fuglesang.

### **Selected committee work**

- Chair, Borelius Medal committee, KTH, 2024-.
- Member, Board of Göran Gustafsson Foundation (KTH/UU), 2023-.
- Chair, Faculty recruitment committee, School of Engineering Sciences, KTH, 2020-2024.
- Chair, *Docent* committee, School of Engineering Sciences, KTH, 2020-2024.
- Member, Board of Institute for Space Physics, Kiruna, 2012-.
- Swedish delegate, EU COST action MP1104 on polarisation, 2011-2015.
- Member, Manne Siegbahn Memorial Lecture committee, 2011-.
- Member, reference group, KTH Space Centre, 2013-.
- Member, National Committee for Astronomy, Swedish Royal Academy of Sciences, 2013-2018.
- Member, Steering committee of The Oskar Klein Centre for Cosmoparticle Physics, 2008-2014.
- Chair, Swedish Space Researchers Committee (SRS) / National COSPAR committee, 2008-2011.

### **Educational activities, KTH**

- Ph.D. student supervision: 10 (completed); 1 (active).
- Postdoc supervision: 10 (completed).
- Supervisor to >25 M.Sc. and B.Sc. thesis students.
  
- Developer and lecturer for a number of undergraduate- and postgraduate-level courses.
- Developer of undergraduate teaching laboratories.
- 2008-2011, Director of undergraduate education (*studierektor*), Department of Physics.
- 2006-2008, Responsible for Modern Physics M.Sc. programme (120 ECTS),

### **Publications**

[Google Scholar](#)