Curriculum Vitae

Higher education qualifications

Master of Science in Physics at Stockholm University, 1995.
Master level studies in Astronomy at Stockholm University, 2008-2009.

Doctoral degree

PhD in Astronomy at Stockholm University, 2015.
Thesis: SN 2011dh and the progenitors of Type IIb supernovae.
Supervisors: Jesper Sollerman and Claes Fransson.

Current position

Research assistant at the department of Astronomy, Stockholm University.

Previous positions and periods of appointment

Software engineer and configuration manager at Teligent AB, 1995-2008.

Other information of relevance for the application.

I have broad experience within the field, covering both observations and theory/modelling. Below follows a brief summary.

Observations

I have been observing on-site with several large telescopes, including the NOT which the NUTS project is based on. In addition, I have been running the Stockholm remote target-of-opportunity (TOO) program at the NOT between 2009 and 2012, for which I also developed tools for automation of the observations. I have reduced and calibrated several large datasets (e.g. those for SN 2011dh; Paper II and IV, and SN 2010jl; Fransson, Ergon et al. 2013), spanning from the ultra-violet (UV) to the mid-infrared (MIR), and including both imaging and spectroscopy. As part of this work I have developed a reduction and calibration software package, with the specific aim to automatize the processing of large sets of data.

Theory/Modelling.

I have deep knowledge and experience in hydrodynamics and radiative transfer, in particular with application to modelling of SNe. I have developed the hydrodynamical code HYDE and the radiative-transfer code JEKYLL, and at my current position in Stockholm I'm continuing the work to advance these tools to the highest level (see the Research Plan for more details). Although not an expert, I'm also acquainted with stellar evolutionary modelling, and in particular with the public stellar evolutionary code MESA, and how to use it to construct SN progenitor models. Finally, it is worth noting that I am a computer programmer by profession, which is a great benefit when developing complex codes.

Publications

1. Peer-reviewed original articles

(Inluding only those for which I have provided significant contributions.)

Paper I : Maund, Fraser, Ergon et al., 2011, ApJ, 739, 37, The Yellow Supergiant Progenitor of the Type II Supernova 2011dh in M51.

Paper II : Ergon et al., 2014, A&A 562, A17, Optical and near-infrared observations of SN 2011dh - The first 100 days.

Paper III : Bersten, Benvenuto, Nomoto, Ergon et al., 2012, ApJ, 757, 31, The Type IIb Supernova 2011dh from a Supergiant Progenitor.

Paper IV : Ergon et al., 2015, A&A 580, A142, The Type IIb SN 2011dh - 2 years of observations and modelling of the lightcurves.

Paper V : Jersktrand, Ergon et al., 2015, A&A 573, A12, Late-time spectral line formation in Type IIb supernovae, with application to SN 1993J, SN 2008ax, and SN 2011dh.

Paper VI : Ergon et al., 2015, PhD Thesis, Hydrodynamical modelling of Type IIb SNe.[1]

Fraser, Ergon et al., 2011, MNRAS, 417, 1417, SN 2009md: another faint supernova from a low-mass progenitor.

Jerkstrand, Fransson, Maguire, Smartt, Ergon et al., 2012, A&A, 546, 28, The progenitor mass of the Type IIP supernova SN 2004et from late-time spectral modeling.

Kankare, Ergon et al., 2012, MNRAS, 424, 855, SN 2009kn - the twin of the Type IIn supernova 1994W.

Taddia, Stritzinger, Sollerman, Phillips, Anderson, Ergon et al., 2012, A&A 537, 14, The Type II supernovae 2006V and 2006au: two SN 1987A-like events.

Fransson, Ergon et al., 2013, ApJ 797, 118, High Density Circumstellar Interaction in the Luminous Type IIn SN 2010jl: The first 1100 days.

Fremling, Sollerman, Taddia, Ergon et al., 2014, A&A 565, 114, The rise and fall of the Type Ib supernova iPTF13bvn - Not a massive Wolf-Rayet star.

Maund, Arcavi, Ergon et al, 2015, MNRAS 454, 2580, Did the progenitor of SN 2011dh have a binary companion?

Moriya, Pruzhinskaya, Ergon & Blinnikov, 2016, MNRAS 455, 423, On the nature of rapidly fading Type II supernovae

12. Monographs

Ergon M., 2015, PhD Thesis, SN 2011dh and the progenitors of Type IIb SNe.

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1 This paper was published as part of the (printed) PhD thesis, and will be published in A&A when the data the modelling relies on is published in spring 2017. The PhD thesis version is available in electronic form here: https://ttt.astro.su.se/~maer0651/hydro-IIb-v7.pdf