

Robert Cumming

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Education

1989 – 1994: Ph D in astrophysics (May 1994) Imperial College of Science, Technology and Medicine, London. Thesis title 'A spectroscopic study of the progenitor of supernova 1987A'.

1985 – 1989: B Sc Honours in astrophysics University of Edinburgh, Scotland

Research

2002-11 – present Department of Astronomy, Stockholm University, Stockholm
Researcher (part time)

Carried out the first measurements and analyses of stellar dynamics in blue compact galaxies (Östlin et al 2004; Cumming et al 2008, 2009). Weighed distant super star clusters (UVES; Östlin, Cumming & Bergvall 2007). Developed software for disentangling gas and stars in 2-d galaxy spectra. Observations at the ESO VLT and Nordic Optical Telescope. Popular talks.

1994 – 1997 Department of Astronomy, Stockholm University, Stockholm
Postdoc

Planned, carried out, and analysed observations of supernovae. Set the first stringent limits on circumstellar hydrogen around a type Ia supernova (Cumming et al 1996). Measured the then smallest amount of ^{56}Ni in a core collapse supernova (Sollerman, Cumming & Lundqvist 1998). Observations at Nordic Optical Telescope, William Herschel Telescope, ESO NTT.

Science communication

2007-07 – present: Swedish Astronomical Society, Stockholm
Editor, Populär Astronomi magazine (part time)

Responsible for planning, content, marketing, layout, ad sales, news reports and articles for both web and print editions of the Swedish-language quarterly popular astronomy magazine. Print run increased by one third in this period. Contact with mainstream media. Also 2005-2007: News editor Responsible for news reports and articles for both web (www.popast.nu) and print editions. Started, maintained and recruited reporters for the magazine's news blog.

2003 – 2005: **Supervisor/teacher** House of Science/Stockholm University, Stockholm. Supervised 12-16 high school student projects in radio astronomy two weeks each year for the university's Research School. Developed material for remote observing from schools (Näslund, Cumming & Paulson 2005).

2002-12 – 2003-10: **Web editor** Department of Astronomy, Stockholm University, Stockholm. Implemented news service for the department's web pages.

Software development

2004-01 – 2007-07 Pointsec Mobile Technologies AB Stockholm
Quality assurance engineer (development of security software for mobile devices)

Test leader: Responsible for planning and coordinating software testing, often with test organisation at a major partner company. Introduced and maintained a process documentation archive. Also Technical writer: Wrote and updated user manuals and information sheets. (part time)

2001-04 – 2002-06 Blueice Research AB, Stockholm

Project manager, development of security software. Project manager for 3 development projects. Introduced improvements in working methods, including project management model, risk analyses, fault management.

1997 – 2001 Ericsson Utvecklings AB, Älvsjö

Project manager for 2 telecom software development projects. Responsible for deliveries, budget and reporting. Responsible for product and document administration and user manuals.

Languages

English (native speaker); Swedish (fluent); German, French; Spanish (basic)

Stellar dynamics of blue compact galaxies II. Evidence for a merger as a trigger for the starburst in ESO 338-IG04

Cumming R. J., Fathi, K., Östlin, G., Marquart, T., Márquez, I., Masegosa, J., Bergvall, N., Amram, P. 2007, *A&A*, 479, 725

Spatially resolved stellar and gaseous kinematics of blue compact galaxies: Integral field spectroscopy of He 2-10 with FLAMES/ARGUS

Marquart, T., Fathi, K., Östlin, G., **Cumming R. J.**, Bergvall, N. 2007, *A&A*, 474, 9

Dynamical mass estimates of two young globular clusters in the blue compact galaxy ESO338-IG04

Östlin, G., **Cumming R. J.**, Bergvall, N. 2005, *A&A*, 461, 471

Stellar dynamics of blue compact galaxies. I. Decoupled star-gas kinematics in ESO 400-G43

Östlin, G., **Cumming R. J.**, Amram, P., Bergvall, N., Kunth, D., Márquez, I., Masegosa, J., Zackrisson, E. 2004, *A&A*, 419, L43

The Type II supernova 1994W: evidence for the explosive ejection of a circumstellar envelope

Chugai, N. N., Blinnikov, S. I., **Cumming R. J.**, Lundqvist, P., Bragaglia, A., Filippenko, A. V., Leonard, D. C., Matheson, T., Sollerman, J. 2004, *MNRAS*, 352, 1213

A very low mass of ^{56}Ni in the ejecta of supernova 1994W

Sollerman, J., **Cumming R. J.**, Lundqvist, P. 1998, *ApJ*, 493, 933

Circumstellar H-alpha from SN 1994D and future Type Ia supernovae: an observational test of progenitor models

Cumming R. J., Lundqvist P., Smith L. J., Pettini M., King D. L. 1996, *MNRAS*, 283, 1355

An early-time infrared and optical study of the Type Ia supernovae SN 1994D and SN 1991T

Meikle W. P. S., **Cumming R. J.**, Geballe T. R., Lewis J. R., Walton N. A., 16 others, 1996, *MNRAS*, 281, 263

Observations of SN 1993J from La Palma -- I. Days 2 to 125

Lewis J. R., Walton N. A., Meikle W. P. S., Martin R., **Cumming R. J.**, Catchpole R. M., 28 others, 1994, *MNRAS*, 266, L27

Cold bright matter near supernova 1987A

Cumming R. J., Meikle W. P. S., 1993, *MNRAS*, 262, 689

Spectroscopy of supernova 1987A at 1-4 micron - II. Days 377 to 1114

Meikle W. P. S., Spyromilio J., Allen D. A., Varani G.-F., **Cumming R. J.**, 1993, *MNRAS*, 261, 535

Spectroscopic and photometric observations of SN 1987A -- VII. Days 793 to 1770

Caldwell J. A. R., Menzies J. W., Banfield R. M., Catchpole R. M., Whitelock P. A., Feast M. W., Lloyd Evans T. H. H., Sekiguchi K., Zijlstra A., Allen D. A., Bell S. A., Blades J. C., Buckley D. A. H., Byrne P. B., Callanan P., Collins C., **Cumming R. J.**, 19 others, 1993, *MNRAS*, 262, 313

Stellar kinematics in blue compact galaxies II. Evidence for a merger as a trigger for the starburst in ESO 338-IG04

Cumming R. J., Östlin, G., Marquart, T., Fathi, K., Bergvall, N., Adamo, A. 2009, *proc. Star-forming Dwarf Galaxies: Ariadne's thread in the Cosmic Labyrinth*, eds P. Papaderos et al, in press (arXiv astro/ph 0901.2869)

SN 1994W: Evidence of Explosive Mass Ejection a Few Years Before Explosion

Chugai, N. N., **Cumming R. J.**, Blinnikov, S. I., Lundqvist, P., Filippenko, A. V., Barth, A. J., Bragaglia, A., Leonard, D. C., Matheson, T., Sollerman, J. 2005, in *Cosmic Explosions, On the 10th Anniversary of SN1993J*, Proc. IAU Colloquium 192, eds Marcaide, J. M., Weiler, K. W., Springer, Berlin, p. 111

An observational limit on circumstellar H α from supernova 1994D

Cumming R. J., Lundqvist P., Smith L. J., Pettini M., King D. L. 1997, in *Thermonuclear Supernovae*, Proc. NATO ASI, eds Ruiz-Lapuente P., Canal R., Isern J., Kluwer, Dordrecht, p. 249

Infrared and optical spectroscopy of Type Ia supernovae

Meikle W. P. S., Bowers E. J. C., Geballe T. R., Walton N. A., Lewis J. R., **Cumming R. J.** 1997, in *Thermonuclear Supernovae*, Proc. NATO ASI, eds Ruiz-Lapuente P., Canal R., Isern J., Kluwer, Dordrecht, p. 53

Supernova Progenitor Constraints from Circumstellar Interaction: Type II

Cumming R. J., Lundqvist, P. 1997, in *Advances in Stellar Evolution, Proc. Workshop Stellar Ecology*, Cambridge University Press, Cambridge, p.297

Supernova Progenitor Constraints from Circumstellar Interaction: Type Ia

Lundqvist, P., **Cumming R. J.** 1997, in *Advances in Stellar Evolution, Proc. Workshop Stellar Ecology*, Cambridge University Press, Cambridge, p.293

Narrow optical emission lines from supernova 1993J

Cumming R. J., Meikle W. P. S., Walton, N. A., Lundqvist, P., 1994, in Clegg R. E. S., Meikle W. P. S., Stevens, I. R., Proc. 34th Herstmonceux Conference, *Circumstellar Media in the Late Stages of Stellar Evolution*, Cambridge University Press, Cambridge, p. 192

Cold bright matter near supernova 1987A

Cumming R. J., Meikle W. P. S., 1993, in Cassinelli J. P., Churchwell E. B., eds, Proc. 104th ASP Meeting, ASP Conf. Ser., 35, 433

High resolution spectroscopy of the circumstellar medium of SN 1987A

Meikle W. P. S., **Cumming R. J.**, Spyromilio J., Allen D. A., Mobasher B., 1991, in Danziger I. J., Kjær K., eds, Proc. ESO/EIPC Workshop on SN 1987A and Other Supernovae, ESO, Garching, p. 595

Near-infrared spectroscopy of supernova 1987A to beyond day 1000

Meikle W. P. S., Allen D. A., Spyromilio J., **Cumming R. J.**, Varani G.-F., Mobasher B., 1991, in Danziger I. J., Kjær K., eds, Proc. ESO/EIPC Workshop on SN 1987A and Other Supernovae, ESO, Garching, p. 265

Hallands länk med universum [interview with model builder Charlotte Helin]

Cumming R., 2008, Populär Astronomi, 10, no. 1, 18

Kroppen i rymden [interview with Dag Linnarsson, professor in space medicine]

Cumming R., 2008, Populär Astronomi, 9, no. 4, 20

Mot planeterna! [interview with space physicist Stas Barabash]

Cumming R., 2008, Populär Astronomi, 9, no. 1, 28

En solskenshistoria [interview with astronomer Martin Asplund]

Cumming R., 2008, Populär Astronomi, 9, no. 3, 26

Politik och partiklar [interview with particle physicist Anna Lipniacka]

Cumming R., 2008, Populär Astronomi, 9, no. 2, 22

Sökes: framtidens astronauter

Cumming R., 2008, Populär Astronomi, 9, no. 2, 18

Tidernas tio bästa supernovor

Cumming R., 2007, Populär Astronomi, 8, no. 1, 12

Från Arvika till Vintergatan

Näslund M., **Cumming R.**, Paulson L. 2005, Populär Astronomi, 6, no. 1, 42

Efter studierna - naturvetare i arbetslivet III

Cumming R. 2003, Naturvetenskapliga fakulteten, Stockholms universitet, Stockholm, 40 pp (http://www.big.su.se/Hemsida/Allmant/efterstudier_3.pdf)

Supernovae galore!

Meikle P., Catchpole R., Lewis J., Martin R., **Cumming R.**, Geballe T., Walton N. 1994, Spectrum (Newsletter of the Royal Observatories), 4, 7

Supernova data archive progress report

Martin R., Lewis J., **Cumming R.**, Meikle P. 1994, Spectrum (Newsletter of the Royal Observatories), 2, 8

Supernova 1993J

Meikle P., Lewis J., Martin R., King D., Argyle R., Catchpole R., Clegg R., **Cumming R.**, Irwin M., Morrison L., Walton N., Unger S., Bunclark P., Harlaftis E., Jones D., Rudd P., Dhillon V., Arévalo M., Lázaro C., Martin E., 1993, Gemini (Newsletter of the Royal Greenwich Observatory), 40, 1

Supernova 1994W in NGC 4041

Cumming R. J., Lundqvist P., Meikle W. P. S. 1994, IAU Circ., No. 6057

Supernova 1994D in NGC 4526

Cumming R. J., Meikle W. P. S., Geballe T. R., 1994, IAU Circ., No. 5951

Supernova 1994D in NGC 4526

Cumming R. J., Meikle W. P. S., Geballe T. R., 1994, IAU Circ., No. 5953

Supernova 1987A in the Large Magellanic Cloud

Cumming R., Meikle P., Spyromilio J., Allen D., 1991, IAU Circ., No. 5156