



INFORMAȚII PERSONALE

Mark Rushton

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Sex: Bărbătesc | Data nașterii: 05/01/1980 | Nationalitatea: Britanică

EXPERIENȚĂ PROFESIONALĂ

(09/14 -)

Cercetător științific III

Institutul Astronomic al Academiei Române, Str. Cuțitul de Argint 5, RO-040557, București, România

- Investigarea formării și evoluției galaxiilor prin tehnici avansate de modelare

(01/09-08/14)

Asistent de cercetare postdoctoral

(04/06-08/08)

Institutul „Jeremiah Horrocks”, Universitatea Central Lancashire, Preston, PR1 2HE, Marea Britanie

- **Cadru didactic universitar:** AA1051 Introducere în Astronomie (9 semestre, 2010-2015), Proiectul AP4553 MPhys (1 semestru, 2011); Astronomie AA2053 UVOIR (2 semestre, 2010), Laborator Anul 2 AP2020 (4 semestre, 2009-2011)
- Colectarea și analiza datelor din domeniul astronomiei: eruptive variables - classical and recurrent novae, luminous red variables, very late thermal pulse objects ; binary stars - cataclysmic variables, symbiotic stars, peculiar binaries; interstellar and circumstellar dust
- Participarea în programele universității destinate publicului
- Participarea în activități de recrutare a studenților la nivel universitar și postuniversitar
- Furnizor de suport tehnic la conferințele organizate de universitate inclusiv la Royal Astronomical Society National Astronomy Meeting (2007) și la International Astronomical Union Symposium 284: The spectral energy distribution of galaxies (2011)

EDUCAȚIE ȘI FORMARE

(09/02- to-06/07)

Doctor în Astronomie și Astrofizică

Universitatea Keele , Keele, ST5 5BG, Marea Britanie

- Astrofizică

(09/98 to 06/02)

Master în Astrofizică

Universitatea Keele Keele, ST5 5BG, Marea Britanie

- Geologie și Astrofizică

COMPETENȚE PERSONALE

Limba maternă

Engleză

Competențe profesionale

- Observații astronomice: imaging/CCD photometry – SPITZER/IRAC, SOFIA/FORCAST, VLA, JCMT/SCUBA, UKIRT/UIST, SAO 1m, spectroscopy – NTT/SOFI, JCMT, SALT/RSS, UKIRT/CGS4/UIST/MICHELLE, IRSF/SIRIUS, GEMINI/GNIRS/PHOENIX, SEST
- Pachete software: data reduction - IRAF, STARLINK, AIPS, SMURF, MIDAS, analiză științifică –, DART-RAY, GALFIT, DUSTY, CLOUDY

- Competențe informatică
- Limbaje de programare: IDL, Fortran, C, C++
 - Sisteme de operare: OS X, Linux, UNIX, Windows
 - Altele: Latex, Microsoft Office, Keynote, Mac Office

Permis de conducere A, B

INFORMAȚII SUPLIMENTARE

- Stagii de lucru
- Visiting Scientist
- Institutul „Jeremiah Horrocks” , Universitatea Central Lancashire, Preston, PR1 2HE, Marea Britanie (2015 -)
 - Max-Planck Institut Für Kernphysik, Saupfercheckweg 1, 699117, Heidelberg, Germania (8 vizite respectiv 14 luni în 2014 - 2017)

- Supervizare academică
- La nivel postuniversitar, studentul Michael Maxwell (Teză de Doctorat: 2009-2013, Multiband observations of recurrent novae)
 - La nivel universitar, studentul Adam Clarke (Lucrarea de Masterat, 2011, Investigating the Properties of V598 Puppis; în prezent este student la doctorat în cadrul Institutului „Jeremiah Horrocks” din Marea Britanie).
 - La nivel universitar, studentul Daniel Holdsworth (Lucrarea de Masterat: 2011, STEREO/HI & Optical Observations of Classical Nova V5583 Sagittarii; în prezent este student la postdoctorat la Institutul „Jeremiah Horrocks”, UK)
 - La nivel universitar, studentul Christopher Patrick (Summer placement project: 2008, Near-Infrared spectroscopy of nova V598 Puppis)

- Granturi de cercetare
- Royal Astronomical Society Travel Grant 2010/R4, *Chemical Abundances of the Secondaries of Recurrent novae* – 1,623 GBP

- Premii
- The John Myers’ Award for Dissertation Project, 2002, Universitatea Keele, Marea Britanie

Publicații ISI

- Eyres, S. P. S., Bewsher, D., Hilman, Y., Holdsworth, D. L., **Rushton, M. T.**, Bresnahan, D., Evans, A., Mroz, 2017, *Temporal resolution of a pre-maximum halt in a classical nova: V5589 Sgr observed with STEREO-HI-1B*, MNRAS, 467, 2684
- Evans, A., Banerjee, D. P. K., Gehrz, R. D., Joshi, V., Ashok, N. M., Ribeiro, V. A. R. M., Darnley, M. J., Woodward, C. E., Sand, D., Marion, G. H., Diamond, T. R., Eyres, S. P. S., Wagner, R. M., Helton, L. A., Starrfield, S., Shenoy, D. P., Krauter, J., Vacca, W. D., **Rushton, M. T.**, 2017, *Rise and fall of the dust shell of the classical nova V339 Delphini*, MNRAS, 466, 4221
- Grootes, M. W., Tuffs, R. J., Popescu, C. C., Norberg, P., Robotham, A. S. G., Liske, J., Andrae, E., Baldry, I. K., Gunawardhana, M., Kelvin, L. S., Madore, B. F., Seibert, M., Taylor, E. N., Alpaslan, M., Brown, M. J. I., Cluver, M. E., Driver, S. P., Bland-Hawthorn, J., Holwerda, B. W., Hopkins, A. M., Lopez-Sanchez, A. R., Loveday, J., **Rushton, M.**, 2017, *Galaxy and Mass Assembly (GAMA): Gas Fueling of Spiral Galaxies in the Local Universe. I. The Effect of the Group Environment on Star Formation in Spiral Galaxies*, AJ, 153, 49
- Pavlenko, Ya. V., Kaminsky, B., **Rushton, M. T.**, Evans, A., Woodward, C. E., Helton, L. A., O'Brien, T. J., Jones, D., Elkin, V. 2016, *Modelling the spectral distribution of the red giant in RS Ophiuchi: evidence for irradiation*, MNRAS, 456, 181
- Gehrz, R. D., Evans, A., Helton, L. A., Shelnoy, D. P., Banerjee, D. P. K., Woodward, C. E., Vacca, W. D., Dykhoff, D. A., et al. 2015, *The Early Infrared Temporal Development of Nova Delphini 2013 (V339 DEL) Observed with the Stratospheric Observatory for Infrared Astronomy (SOFIA) and from the Ground*, ApJ, 812, 132
- Worters, H., **Rushton, M. T.** 2014, *Fast H α emission line variability in RS Ophiuchi*, MNRAS, 442, 2637
- Holdsworth, D. L., **Rushton, M. T.**, Bewsher, D., Walter, F. M., Eyres, S. P. S., Hounsell, R., Darnley, M. J. 2014, *STEREO/HI and optical observations of classical nova V5583 Sagittarii*, MNRAS, 438, 3483
- Evans, A., Gehrz, R. D., Helton, L. A., Starrfield, S., Bode, M. F., Osborne, J. P., Banerjee, D. P. K., Ness, J.-U., Walter, F. M., Woodward, C. E., Kuulkers, E., Eyres, S. P. S., Oliveira, J. M., Ashock, N. M., Krautter, J., Brien, T. J., Page, K. L., **Rushton, M. T.** 2012, *Infrared observations of the recurrent nova T Pyxidis: ancient dust basks in the warm glow of the 2011 outburst*, MNRAS, 424, L69
- Evans, A., van Loon, J. Th., Woodward, C. E., Gehrz, R. D., Clayton, G. C., Helton, L. A., **Rushton, M. T.**, Eyres, S. P. S., Krautter, J., Starrfield, S., Wagner, R. M. 2011, *Solid-phase C₆₀ in the peculiar binary XX Oph*, MNRAS, 419, 1465
- Maxwell, M. P., **Rushton, M. T.**, Darnley, M. J., Worters, H. L., Bode, M. F., Evans, A., Eyres, S. P. S., Kouwenhoven, M. B. N., Walter, F. M., Hassall, B. J. M. 2011, *The Helium Abundance in the Ejecta of U Scorpii*, MNRAS, 419, 1465
- Banerjee, D. P. K., Das, R. K., Ashok, N. M., **Rushton, M. T.**, Eyres, S. P. S., Maxwell, M. P., Worters, H. L., Evans, A., Schaefer, B. E. 2010, *Near-infrared studies of the 2010 outburst of the recurrent nova U Scorpii*, MNRAS, 506, L85
- Evans, A., Gehrz, R. D., Woodward, C. E., Helton, L. A., **Rushton, M. T.**, Bode, M. F., Krautter, J., Lyke, J., Lynch, D. K., Ness, J.-U., Starrfield, S., Truran, J. W., Wagner, R. M. 2010, *The peculiar dust shell of Nova DZ Cru (2003)*, MNRAS, 406, L85
- Pavlenko, Ya. V., Woodward, C. E., **Rushton, M. T.**, Kaminsky, B., Evans, A. 2010, *First overtone CO bands in the giant component of RS Ophiuchi: the ¹²C/¹³C ratio in 2008*, MNRAS, 404, 206
- **Rushton, M. T.**, Kaminsky, B., Lynch, D. K., Pavlenko, Ya. V., Evans, A., Eyres, S. P. S., Woodward, C. E., Russell, R. W., Rudy, R. J., Sitko, M. L., Kerr, T. 2010, *Changes in the red giant and dusty environment of the recurrent noav RS Ophiuchi following the 2006 eruption*, MNRAS, 401, 99

- **Eyres, S. P. S., O'Brien, T. J., Beswick, R., Muxlow, T. W. B., Anupama, G. C., Kantharia, N. G., Bode, M. F., Gawroski, M. P., Feiler, R. Evans, A., Evans, A., Rushton, M. T., Davis, R. J., Prabhun T., Porcas, R., Hassall, B. J. M.** 2009, "Double peak and non-thermal collimated ejecta in RS Ophiuchi following the 2006 outburst", MNRAS, 395, 1533
- **Worters, H. L., Rushton, M. T., Eyres, S. P. S., Geballe, T. R., Evans, A.** 2008, "Sakurai's Object: characterising the near-infrared CO ejecta between 2003 and 2007", MNRAS, 393, 108
- **Rushton, M. T., Evans, A., Eyres, S. P. S., van Loon, J. Th., Smalley, B.** 2008, "How peculiar is the 'peculiar variable' DZ Crucis (Nova Cru 2003)?", MNRAS, 386, 289
- **Geballe, T. R., Rushton, M. T., Eyres, S. P. S., Evans, A., van Loon, J. Th., Smalley, B.** 2007, "Infrared spectroscopy of carbon monoxide in V838 Monocerotis during 2002-2006", A&A, 467, 269
- **Pavlenko, Ya. V., van Loon, J. Th., Evans, A., Rushton, M. T., Kaminsky, B. M., Filippenko, A. V., Foley, R. J., Li, W., Smalley, B., Yakovia, L. A.** 2007, "The properties of V838 Monocerotis in 2002 November", A&A, 460, 245
- **Evans, A., Tyne, V. H., van Loon, J. Th., Smalley, B., Geballe, T. R., Gehrz, R. D., Woodward, C. E., Zijlstra, A. A., Polomski, E., Rushton, M. T., et al.** 2006, "The Spitzer Infrared Spectrometer view of V4334 Sgr (Sakurai's Object)", MNRAS, 373, 75
- **Oliveria, J. M., Jefferies, R. D., van Loon, J. Th., Rushton, M. T.** 2006, "Circumstellar discs in the young σ Orionis Cluster", MNRAS, 369, 272
- **Rushton, M. T., Geballe, T. R., Filippenko, A. V., Chomock, R., Li, W., Leonard, D. C., Foley, R. J., Evans, A., Smalley, B., van Loon, J. Th., Eyres, S. P. S.** 2005, "Spectral evolution of V838 Monocerotis in the optical and near-infrared in early 2002", MNRAS, 360, 1281
- **Rushton, M. T., Geballe, T. R., Evans, A., Smalley, B., van Loon, J. Th., Eyres, S. P. S.** 2005, "Infall and SiO emission in V838 Mon", MNRAS, 359, 624
- **van Loon, J. Th., Evans, A., Rushton, M. T., Smalley, B.** 2004, "Discovery of multiple shells around V838 Monocerotis", A&A, 427, 193
- **Rushton, M. T., Coulson, I. M., Evans, A., Nyman, L.-Å., Smalley, B., Geballe, T. R., van Loon, J. Th., Eyres, S. P. S., Tyne, V. H.** 2003, "Search for molecular emission from V838 Monocerotis", A&A, 412, 767
- **Evans, A., Geballe, T. R., Rushton, M. T., Smalley, B., van Loon, J. Th., Eyres, S. P. S., Tyne, V. H.** 2003, "V838 Mon: an L Supergiant", MNRAS, 343, 1054

Conference proceedings

- **Rushton, M. T., Woodward, C. E., Helton, L. A., Gehrz, R. D., Evans, A., Kaminsky, B., Pavlenko, Ya. V., Eyres, S. P. S., Maxwell, M.** 2014, "Silicate dust in RS Ophiuchi", ASP Conference Series, ed P. A. Woudt, V. A. R. M. Riberio, 490, 249
- **Maxwell, M. P., Rushton, M. T., Eyres, S. P. S.** 2014, "Modelling the recurrent nova U Scorpii in quiescence", Stella Novae: Past and Future Decades, ASP Conference Series, ed P. A. Woudt, V. A. R. M. Riberio, 490, 205
- **Rushton, M. T., Helton, L. A., Kaminsky, B., Woodward, C. E., Pavlenko, Ya. V., Evans, A.** 2011, "Changes in the dust environment of the recurrent nova RS Ophiuchi", The proceedings of the Binary Paths to the Explosions of type Ia Supernovae, Proceedings of the 281st Symposium of the International Astronomical Union, ed. R. Di Stefano, M. Orto, 281, 199
- **Rushton, M. T., Pavlenko, Ya. V., Kaminsky, B., Woodward, C. E., Evans, A.** 2014, "The nature of the secondary in RS Ophiuchi", The proceedings of the Physics of Accreting Compact Binaries
- **Rushton, M. T., Geballe, T. R., Evans, A., van Loon, J. Th., Smalley, B., Eyres, S. P. S.** 2007, "Infrared Observations of V838 Mon", The Nature of V838 Mon and its Light Echo ASP Conference Series, ed. R. L. M. Corradi, U. Munari, 363, 32
- **Geballe, T. R., Evans, A., van Loon, J. Th., Smalley, B., Rushton, M. T., Eyres, S. P. S.** 2007, "What Infrared Spectroscopy of Carbon Monoxide Tells us about V838 Mon", The Nature of V838 Mon and its Light Echo, ASP Conference Series, ed. R. L. M. Corradi, U. Munari, 363, 110
- **Rushton, M. T., Evans, A., Smalley, B., van Loon, J. Th., Geballe, T. R., Eyres, S. P. S.** 2005, "The spectral evolution of V838 Monocerotis", American Astronomical Society Meeting 206, Bulletin of the American Astronomical Society, 37, 486
- **Starrfield, S., Wagner, R. M., Hauschildt, P. H., Bond, H. E., Evans, A., Rushton, M. T., Munari, U., Henden, A., Levay, Z. G., Panagia, N., et al.** 2005, "The 2002 outburst of V838 Mon: as cool as it gets", Proceedings of the 13th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun, ed F. Favata, G. A. J. Hussein, B. Battrock, 560, 359
- **Geballe, T. R., Rushton, M. T., Evans, A., Smalley, B., van Loon, J. Th., Tyne, V. H., Eyres, S. P. S.** 2003, "The Remarkable Rapidly Evolving Infrared Spectrum of V838 Monocerotis", American Astronomical Society Meeting 2003, Bulletin of the American Astronomical Society, 35, 134

- **Rushton, M. T.**, Smalley, B., Ogley, R. N., Wood, J. H., Hauschildt, P., Bleach, J. N. 2003, "Model Atmosphere Analyses of Post-Common Envelope Stars", Proceedings of the 210th Symposium of the International Astronomical Union, ed. N. Piskunov, W. W. Weiss, D. F. Gray, 210, 33

Alte publicații

- Gehrz, R. D., Evans, A., Woodward, C. E., Keller, L., Helton, L. A., Shenoy, D., Banerjee, D. P. K., Ashok, N. M., et al. 2015, "SOFIA Observations of Dust Formation in Nova V5668 Sgr (2015 #2)", ATel, 7862
- Worters, H. L., Eyres, S. P. S., **Rushton, M. T.**, Schaefer, B. 2010, IAUC, 9114
- Geballe, T. R., Smalley, B. Evans, A., **Rushton, M. T.** 2002, IAUC, 8016

Apariții în presă

- Royal Astronomical Society Press Release, 22 Feb 2012, "NASA's Spitzer finds solid buckyballs in space"
- Astronomy Now, Issue Jun. 2010, "Stellar merger may have sparked brilliant outburst"
- Astronomy News, Oct. 2006, Vol. 170, p. 248, "Enigmatic Eruption The strange case of V838 Monocerotis"
- Royal Astronomical Society Press Release, 27 Mar. 2003, "Star transforms into coolest known supergiant"

Seminarii și prezentări științifice

- Connections in Astronomy, Astrophysics, Space and Planetary Sciences – May 2017, Cluj-Napoca, Romania, "Modelling the ultraviolet/submillimetre spectral energy distributions of spiral galaxies" – Contributed Talk
- Mar. 2014, Cardinal Newman College, Preston, UK, "Stella Novae" -Colloquium
- Stella Novae: Past and Future Decades – Feb. 2013, Cape Town, South Africa, "Silicate dust in RS Ophiuchi" - Contributed Talk
- SOFIA Community Task Force Teletalk – Aug. 2011, "Novae: classical and recurrent" – Online colloquium
- Institute of Physics – Sep. 2010, University of Lancaster, UK, "Novae – classical and recurrent" – Public Lecture
- Physics of accreting binaries – July 2010, Kyoto University, Japan, "The nature of the secondary in RS Ophiuchi" – Contributed Talk
- Feb. 2009, Crimean Astrophysical Observatory, Ukraine, "V838 Mon and the new class of transients" – Colloquium
- Feb. 2009, Academy of Science of the Ukraine, Kyiv, Ukraine, "V838 Mon and the new class of transients" – Colloquium
- May 2007, Jodrell Bank Observatory, UK, "V838 Mon and the new class of eruptive variables" – Colloquium
- Jan. 2007, Liverpool John Moores' University, UK, "V838 Mon and the new class of eruptive variables" – Colloquium
- National Astronomy Meeting – Apr. 2003, Dublin, Ireland, "Infrared spectroscopy of V838 Mon"