

Stuart E. Sale

CONTACT INFORMATION	Astrophysics Group, School of Physics, University of Exeter, Exeter, EX4 4QL, United Kingdom	<i>E-mail:</i> ssale@astro.ex.ac.uk <i>Telephone:</i> +44 (0)1392 726245
EMPLOYMENT	University of Exeter, UK Research Fellow	Oct. 2015 - present
	University of Oxford, UK Postdoctoral Research Assistant	Feb. 2012 - Sep. 2015
	Universidad de Valparaíso & Pontificia Universidad Católica de Chile, Chile Iniciativa Científica Milenio Postdoctoral Fellow	Jan. 2010 - Jan. 2012
	University of Hertfordshire, UK Postdoctoral Research Assistant	Oct. 2009 - Jan. 2010
EDUCATION	Imperial College London, UK PhD, Astrophysics: <ul style="list-style-type: none">• Principal supervisor: J.E. Drew• Thesis Title: ‘Extinction Mapping and the Structure of the Outer Galactic Disc as Revealed by IPHAS Observations’	Oct. 2006 - Jan. 2010
	St Peter’s College, University of Oxford, UK MPhys, Physics: <ul style="list-style-type: none">• 1st Class Honours• Johnson Memorial Prize: Best MPhys project in Astrophysics.	Oct. 2002 - Jun. 2006
LEAD AUTHOR REFEREED JOURNAL ARTICLES	S.E. Sale , C.M. Brunt, ‘ <i>Improved dust column density mapping</i> ’, in preparation for submission to MNRAS. S.E. Sale , J. Magorrian, ‘ <i>Large scale three dimensional Gaussian process extinction mapping</i> ’, in preparation for submission to MNRAS. S.E. Sale , ‘ <i>Three-dimensional extinction mapping and selection effects</i> ’, 2015, MNRAS, 452, 2960. S.E. Sale , J. Magorrian, ‘ <i>Marginal likelihoods of distances and extinctions to stars: computation and compact representation</i> ’, 2015, MNRAS, 448, 1738. S.E. Sale , J. Magorrian, ‘ <i>Three-dimensional extinction mapping using Gaussian random fields</i> ’, 2014, MNRAS, 445, 256. S.E. Sale , J.E. Drew, G. Barentsen, et al., ‘ <i>A 3D extinction map of the northern Galactic plane based on IPHAS photometry</i> ’, 2014, MNRAS, 443, 2907. S.E. Sale , ‘ <i>3D Extinction Mapping Using Hierarchical Bayesian Models</i> ’, 2012, MNRAS, 427, 2119.	

S.E. Sale, J.E. Drew, C. Knigge, et al., ‘*The structure of the outer Galactic disc as revealed by IPHAS early A stars*’, 2010, MNRAS, 402, 713.

S.E. Sale, J.E. Drew, Y.C. Unruh, et al., ‘*High Spatial Resolution Galactic 3D Extinction Mapping with IPHAS*’, 2009, MNRAS, 392, 497.

OTHER REFEREED
JOURNAL ARTICLES

R. Schonrich, M. Aumer, **S.E. Sale**, ‘*Kinematic Detection of the Galactic Nuclear Disc*’, 2015, ApJL, 812, 21.

M. Mohr-Smith, J.E. Drew, G. Barentsen, ... **S.E. Sale**, ‘*New OB star candidates in the Carina Arm around Westerlund 2 from VPHAS+*’, 2015, MNRAS, 450, 3855.

R. Raddi, J.E. Drew, D. Steeghs, ... **S.E. Sale**, ‘*A deep catalogue of classical Be stars in the direction of the Perseus Arm: spectral types and interstellar reddenings*’, 2015, MNRAS, 446, 274.

G. Barentsen, H.J. Farnhill, J.E. Drew, ... **S.E. Sale**, et al., ‘*The Second Data Release of the INT Photometric H-Alpha Survey of the Northern Galactic Plane (IPHAS DR2)*’, 2014, MNRAS, 444, 3230.

L. Huckvale, E. Kerins, **S.E. Sale**, ‘*Reference image selection for difference imaging analysis*’, 2014, MNRAS, 442, 259.

J.E. Drew, E. Gonzalez-Solares, R. Greimel, ... **S.E. Sale**, et al., ‘*The VST Photometric H Survey of the Southern Galactic Plane and Bulge (VPHAS+)*’, 2014, MNRAS, 440, 2036.

R. Raddi, J.E. Drew, J. Fabregat, ... **S.E. Sale**, et al., ‘*First results of an H α based search of classical Be stars in the Perseus Arm and beyond*’, 2013, MNRAS, 430, 2169.

G. Barentsen, J.S. Vink, J.E. Drew, E.; **S.E. Sale**, ‘*Bayesian inference of T Tauri star properties using multi-wavelength survey photometry*’, 2012, MNRAS, 429, 1981.

A.N. Chené, J. Borissova, J.R.A. Clarke, ... **S.E. Sale**, et al., ‘*Massive open star clusters using the VVV survey. I. Presentation of the data and description of the approach*’, 2012, A&A, 545, 54.

R.K. Saito, M. Hempel, D. Minniti, ... **S.E. Sale**, et al., ‘*VVV DR1: The first data release of the Milky Way bulge and southern plane from the near-infrared ESO public survey VISTA variables in the Vía Láctea*’, 2012, A&A, 537, 107.

J. Borissova, C. Bonatto, R. Kurtev, ... **S.E. Sale**, et al., ‘*VVV Pointed Search for New Galactic Open Clusters*’, 2012, A&A, 532, 131.

K. Viironen, A. Mampaso, R.L.M. Corradi, ... **S.E. Sale**, et al., ‘*A new Planetary Nebula in the outer reaches of the Galaxy*’, 2012, A&A, 530, 107.

R.L.M. Corradi, L. Sabin, B. Miszalski, ... **S.E. Sale**, et al., ‘*The Necklace: equatorial and polar outflows from the binary central star of the new planetary nebula IPHASX J194359.5+170901*’, 2011, MNRAS, 410, 1349.

C. Giammanco, **S.E. Sale**, R.L.M. Corradi, et al., ‘*IPHAS extinction distances to*

Planetary Nebulae’, 2011, A&A, 525, 58.

D. Minniti, P.W. Lucas, J.P. Emerson, ... **S.E. Sale**, et al., ‘*VISTA Variables in the Vía Láctea (VVV): The public ESO near-IR variability survey of the Milky Way*’, 2010, NewA, 15, 433.

R.L.M. Corradi, U. Munari, R. Greimel, ... **S.E. Sale**, et al., ‘*The ongoing outburst of the new symbiotic star IPHASJ190832.31+051226.6*’, 2010, A&A, 509, 9.

R.L.M. Corradi, M., Valentini, U. Munari, ... **S.E. Sale**, et al., ‘*IPHAS and the symbiotic stars . II. New discoveries and a sample of the most common mimics*’, 2010, A&A, 509, 41.

P.J. Groot , K. Verbeek , R. Greimel, ... **S.E. Sale**, et al., ‘*The UVEX Survey: The UV-Excess Survey of the Northern Galactic Plane*’, 2009, MNRAS, 399, 323.

K. Viironen, A. Mampaso, R.L.M. Corradi, M. Rodriguez, R. Greimel, L. Sabin, **S.E. Sale**, et al., ‘*New Young Planetary Nebulae in IPHAS*’, 2009, A&A, 502, 113.

R. Wesson, M.J. Barlow, R.L.M. Corradi, ... **S.E. Sale**, et al., ‘*A Planetary Nebula Around Nova V458 Vul Undergoing Flash Ionization*’, 2008, ApJL, 688, 21.

E.A. González-Solares, N.A. Walton, R. Greimel, J.E. Drew, M.J. Irwin, **S.E. Sale**, et al., ‘*Initial Data Release From the INT Photometric H α Survey of the Northern Galactic Plane (IPHAS)*’, 2008, MNRAS, 388, 89.

J.E. Drew, R. Greimel, M.J. Irwin, **S.E. Sale**, ‘*Early-A stars from IPHAS, and their distribution in and around the Cyg OB2 association*’, 2008, MNRAS, 386, 1761.

CONFERENCE
PROCEEDINGS

S.E. Sale, ‘*Galactic 3D extinction maps*’, 2015, in Getting ready for Gaia: 3D structure of the ISM, Mem. S.A.It, 86, 568.

S.E. Sale, ‘*Three-dimensional extinction mapping using Gaussian random fields*’, 2014, in The Milky Way Unravelling by Gaia, EAS Publications Series, 67-68, 283.

J. Borissova, J.R.A. Clarke, C. Bonatto, ... **S.E. Sale**, et al., ‘*New Galactic Star Clusters Discovered in the VVV Survey*’, 2012, Proceedings of a Scientific Meeting in Honor of Anthony F.J. Moffat, Conference Series, Vol. 465, p504.

A.N. Chené, J. Borissova, J.R.A. Clarke, **S.E. Sale**, et al., ‘*Young Stellar Clusters in the VVV Survey*’, 2012, Proceedings of a Scientific Meeting in Honor of Anthony F.J. Moffat, Conference Series, Vol. 465, p410.

R. Raddi, J.E. Drew, **S.E. Sale**, et al., ‘*Tracing the structure of the Perseus Arm with IPHAS*’, 2012, in Star Clusters in the Era of Large Surveys, Astrophysics and Space Science Proceedings, p259.

R. Kurtev, J. Borissova, C. Bonatto, ... **S.E. Sale**, et al., ‘*VVV Study of the Young Milky Way Star Clusters: Mercer 35, 69 and 70*’, 2012, in Star Clusters in the Era of Large Surveys, Astrophysics and Space Science Proceedings, p109.

J. Borissova, R. Kurtev, S. Folkes, ... **S.E. Sale**, et al., ‘*VVV Search for New Young Clusters Towards the Star Forming Regions in our Galaxy. First Results*’, 2012, in

Star Clusters in the Era of Large Surveys, Astrophysics and Space Science Proceedings, p101.

F. Penaloza, R. Kurtev, J. Borissova, ... **S.E. Sale**, et al., ‘*VVV study of the young Milky Way star clusters: Mercer 35, 69 and 70*’, 2011, XIII Latin American Regional IAU Meeting, Revista Mexicana de Astronomia y Astrofisica (Serie de Conferencias), Vol. 40, p284.

J. Borissova, R. Kurtev, F. Penaloza, ... **S.E. Sale**, et al., ‘*VVV Pointed Search for New Galactic Open Clusters*’, 2011, XIII Latin American Regional IAU Meeting, Revista Mexicana de Astronomia y Astrofisica (Serie de Conferencias), Vol. 40, p267.

M. Catelan, D. Minniti, P.W. Lucas, ... **S.E. Sale**, et al., ‘*The Vista Variables in the Vía Láctea (VVV) ESO Public Survey: Current Status and First Results*’, 2011, in RR Lyrae Stars, Metal-Poor Stars, and the Galaxy, Carnegie Observatories Astrophysics Series, Vol. 3, p145.

S.E. Sale, J.E. Drew and the IPHAS collaboration, ‘*High Spatial Resolution Galactic 3D Extinction Mapping with IPHAS*’, 2010, in IAU XXVII General Assembly, Special Session 8: The Galactic Plane, in depth and across the spectrum, Highlights of Astronomy, Vol. 15, p785.

S.E. Sale, J.E. Drew, R. Greimel, Y.C. Unruh and the IPHAS collaboration, ‘*High Spatial Resolution Empirical 3D Extinction Mapping with IPHAS*’, 2009, in The Galaxy Disk In Cosmological Context, IAU Symposium 254, Cambridge University Press, Vol. 254, p69.

S. Weston, R. Napiwotzki, **S.E. Sale**, ‘*Central Stars of Planetary Nebulae in SDSS and IPHAS*’, 2009, in The 16th European White Dwarf Workshop, Journal of Physics: Conference Series, Vol.172.

S.E. Sale, C. Schoenaers, A.E. Lynas-Gray, ‘*A New Determination Of Abundances in the Subdwarf-B Star HD 4539*’, 2008, in Hot Subdwarf Stars and Related Objects, ASP Conference Series, Vol. 392, p109.

OTHER PUBLICATIONS

M. Hempel, D. Minniti, I. Dekany, ... **S. Sale**, et al., ‘*VISTA Variables in the Vía Láctea (VVV): Halfway Status and Results*’, 2014, ESO Messenger, 155, 29.

J.E. Drew, G. Barentsen, J. Fabregat, ... **S. Sale**, et al., ‘*VST Photometric H-alpha Survey of the Southern Galactic Plane and Bulge (VPHAS+)*’, 2013, ESO Messenger, 154, 31.

D. Minniti, J.J. Claria, R.K. Saito, ... **S. Sale**, et al., ‘*The VVV Survey of the Milky Way: first year results*’, 2011, Boletin de la Asociacion Argentina de Astronomia, 54, 265.

R. Saito, M. Hempel, J. Alonso-García, ... **S. Sale**, et al., ‘*VISTA Variables in the Vía Láctea (VVV): Current Status and First Results*’, 2010, ESO Messenger, 141, 24.

C. Knigge, D. Steeghs, B. Gaensicke, ... **S.E. Sale**, et al., ‘*The optical counterpart of the new Fermi LAT flaring source J0109+6134 near the Galactic Plane*’, 2010, ATel, 2429.

TALKS AND
EXTERNAL
SEMINARS

Invited talk at EWASS 2015 Special Session 20 "Getting ready for Gaia: 3D structure of the ISM", Tenerife, Spain, June 2015, '*Galactic 3D extinction maps*'.

The Milky Way Unravalled by Gaia, Barcelona, Spain, December 2014, '*Three-dimensional extinction mapping using Gaussian random fields*'.

Seminar, Keele University, UK, November 2014, '*Mapping the Galactic ISM in 3D*'.

The Milky Way: Stars, Gas, Dust and Magnetic Fields in 3D, Heidelberg, Germany, June 2012, '*Improved 3D Extinction Mapping Using Hierarchical Bayesian Models*'.

Seminar, University of Hertfordshire, UK, May 2012, '*Improved 3D Extinction Mapping Using Hierarchical Bayesian Models*'.

Seminar, Institute of Astronomy, Cambridge, UK, May 2012, '*Improved 3D Extinction Mapping Using Hierarchical Bayesian Models*'.

Optical/IR Galactic Plane Surveys Meeting, Hatfield, UK, July 2011, '*Bayesian analysis of star clusters*'.

Optical/IR Galactic Plane Surveys Meeting, Hatfield, UK, July 2011, '*3D Extinction Mapping Using Hierarchical Bayesian Models*'.

The interstellar medium in three dimensions with Gaia, Leiden, Netherlands, July 2011, '*3D Extinction Mapping Using Hierarchical Bayesian Models*'.

Assembling the Puzzle of the Milky Way, Grand Bornand, France, April 2011, '*3D Extinction Mapping Using Hierarchical Bayesian Models*'.

VVV Science Meeting 2010, Viña del Mar, Chile, December 2010, '*Extinction Mapping With VVV*'.

Spiral Structure in the Milky Way: Confronting observations and theory, Bahia Inglesa, Chile, November 2010, '*The Structure of the Outer Galactic Disc as Revealed by IPHAS Early A Stars*'.

IAU XXVII General Assembly, Special Session 8, Rio de Janeiro, Brazil, August 2009, '*High Spatial Resolution Galactic 3D Extinction Mapping with IPHAS*'.

JENAM 2009 - Session: The Galaxy and its satellites, Hatfield, UK, April 2009, '*Photometric Mapping of the Outer Galactic Disc Using IPHAS A Stars*'.

TEACHING
EXPERIENCE

2012 to 2015 - 3rd Year Physics tutorials, Jesus College Oxford.

2007 to 2009 - Assessed problem sheet marker, Imperial College London.

2006 to 2009 - Demonstrator in 2nd Year Classworks, Imperial College London.

SERVICE

Referee for MNRAS, ApJ, A&A and AP&SS.

Co-chair National Astronomy Meeting 2014, parallel session: Gaia and Galactic Plane Surveys.

Seminar organiser at Departamento de Física y Astronomía, Universidad de Valparaíso 2010.

LOC member VVV Science Meeting 2010.

OBSERVING
EXPERIENCE
LANGUAGES

30 nights of optical and NIR photometry.

English (native), Spanish (CEFR C1), French (CEFR B1).