

Clare M. Saunders

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RESEARCH	Laboratoire de Physique Nucléaire et de Hautes Énergies, IN2P3, CNRS Postdoctoral Fellow – Subaru Strategic Program – Nearby Supernova Factory	2016-Present
	Lawrence Berkeley National Lab Graduate Student Researcher – Nearby Supernova Factory – Supernova Cosmology Project / SeeChange	2011-2016
	Stancil Research Group, University of Georgia Undergraduate Student Researcher	2008-2010
EDUCATION	University of California, Berkeley – Ph.D in Physics, Advisor: Saul Perlmutter – M.A. in Physics	July, 2016
	University of Georgia – Post-baccalaureate work equivalent to Physics Major	2008-2010
	St. John's College – B.A. in Liberal Arts	May, 2008
FELLOWSHIPS	Fellow of the Institut Lagrange de Paris	2016-present
AND AWARDS	ARCS Foundation Fellow	2010-2015
	Outstanding Senior Physics Student, UGA Physics Department	2010
	Outstanding Junior Physics Student, UGA Physics Department	2009
	St. John's College Math Award	2007
OTHER COMPETENCIES	– Computing Languages: Python, C++ – Experience with US DOE NERSC machine, IN2P3 Centre de Calcul – Development of SNfactory and SSP data processing pipelines – Languages: English (native), French (CEFRL B2 level)	

TEACHING	UC Berkeley	2012
	– Teaching assistant for “Physics and Music” course	
	St. John’s College	2007-2008
	– Math Assistant	
SERVICE	Chair of SNfactory Video Conference Series	2017-present
	Referee for <i>Publications of the Astronomical Society of the Pacific</i>	

Publications

(1st Author)

- Saunders, C., Aldering, G., Antilogus, P., et al. 2018 *SNEMO: Improved Empirical Models for Type Ia Supernovae*, arXiv:1810.09476 (accepted in ApJ)
- Saunders, C., Aldering, G., Antilogus, P., et al. 2015, *Type Ia Supernova Distance Modulus Bias and Dispersion from K-correction Errors: A Direct Measurement Using Light Curve Fits to Observed Spectral Time Series*, ApJ, 800, 57

(Co-author)

- Léget, P.-F., Pruzhinskaya, M. V., Ciulli, A., et al. 2018, *Correcting for peculiar velocities of Type Ia supernovae in clusters of galaxies*, A&A, 615, A162
- Roman, M., Hardin, D., Betoule, M., et al. 2018, *Dependence of Type Ia supernova luminosities on their local environment*, A&A, 615, A68
- Rigault, M., Brinnet, V., Aldering, G., et al. 2018, *Strong Dependence of Type Ia Supernova Standardization on the Local Specific Star Formation Rate*, arXiv:1806.03849
- Nordin, J., Aldering, G., Antilogus, P., et al. 2018, *Understanding type Ia supernovae through their U-band spectra*, A&A, 614, A71
- Fremling, C., Sollerman, J., Kasliwal, M. M., et al. 2018, *Oxygen and helium in stripped-envelope supernovae*, arXiv:1807.00100
- Lombardo, S., Küsters, D., Kowalski, M., et al. 2017, *SCALA: In situ calibration for integral field spectrographs*, A&A, 607, A113
- Huang, X., Raha, Z., Aldering, G., et al. 2017, *The Extinction Properties of and Distance to the Highly Reddened Type Ia Supernova 2012CU*, ApJ, 836, 157
- Fakhouri, H. K., Boone, K., Aldering, G., et al. 2015, *Improving Cosmological Distance Measurements Using Twin Type Ia Supernovae*, ApJ, 815, 58
- Ruben, D., Aldering, G., Barbary, K., et al. 2015, *UNITY: Confronting Supernova Cosmology's Statistical and Systematic Uncertainties in a Unified Bayesian Framework*, ApJ, 813, 137
- Rigault, M., Aldering, G., Kowalski, M., et al. 2015, *Confirmation of a Star Formation Bias in Type Ia Supernova Distances and its Effect on the Measurement of the Hubble Constant*, ApJ, 802, 20
- Sasdelli, M., Hillebrandt, W., Aldering, G., et al. 2015, *A Metric Space for Type Ia Supernova Spectra*, MNRAS, 447, 1247
- Maguire, K., Sullivan, M., Pan, Y.-C., et al. 2014, *Exploring the spectral diversity of low-redshift Type Ia supernovae using the Palomar Transient Factory*, MNRAS, 444, 3258

- Kim, A. G., Aldering, G., Antilogus, P., et al. 2014, *Type Ia Supernova Hubble Residuals and Host-Galaxy Properties*, ApJ, 784, 51
 - Nordin, J., Rubin, D., Richard, J., et al. 2014, *Lensed Type Ia Supernovae as Probes of Cluster Mass Models*, MNRAS, 440, 2742
 - Scalzo, R.; Aldering, G.; Antilogus, P., et al 2014, *Type Ia supernova bolometric light curves and ejected mass estimates from the Nearby Supernova Factory*, MNRAS, 440, 1498
 - Feindt, U.; Kerschhaggl, M.; Kowalski, M., et al. 2013, *Measuring cosmic bulk flows with Type Ia supernovae from the Nearby Supernova Factory*, A&A, 560, 90
 - Rigault, M.; Copin, Y.; Aldering, G., et al. 2013, *Evidence of environmental dependencies of Type Ia supernovae from the Nearby Supernova Factory indicated by local H α* , A&A, 560, 66
 - Pereira, R.; Thomas, R. C.; Aldering, G., et al. 2013, *Spectrophotometric time series of SN 2011fe from the Nearby Supernova Factory*, A&A, 554, 27
 - Kim, A. G.; Thomas, R. C.; Aldering, G., et al. 2013, *Standardizing Type Ia Supernova Absolute Magnitudes Using Gaussian Process Data Regression*, ApJ, 766, 84
 - Rubin, D.; Knop, R. A.; Rykoff, E., et al. 2013, *Precision Measurement of The Most Distant Spectroscopically Confirmed Supernova Ia with the Hubble Space Telescope*, ApJ, 763, 35
 - Röpke, F. K.; Kromer, M.; Seitenzahl, I. R., et al. 2012, *Constraining Type Ia Supernova Models: SN 2011fe as a Test Case*, ApJ, 750, 19
- + Astronomer's Telegrams: #3838, 4156, 4161, 4253, 4307, 4311, 4331, 4348, 4392, 4443, 4461, 4466, 4476, 4482, 4492, 4497, 4505, 4526, 4533, 4537, 4538, 4566, 4582, 4637, 4638, 4650, 4654, 4691, 4693, 4701, 4728, 4965, 4971, 4972, 4994, 5029, 5047, 5164, 5203, 5214, 5219, 5270, 6254

SELECTED TALKS

- European Week of Astronomy and Space Science, Liverpool, April 2018
New Models for Type Ia Supernovae with Spectrophotometric Data from the Nearby Supernova Factory
- Rencontres de Moriond, La Thuile, March 2018
Improving the Standardization of Type Ia Supernovae
- Institute de Physique Nucléaire de Lyon, Seminar, March 2017
Les améliorations actuelles et futures de l'utilisation de Supernovae de Type Ia pour la cosmologie
- Physics in and Through Cosmology, Berkeley, June 2016
My Path to Studying Supernova and Cosmology (public outreach talk)
- The 226th Meeting of the AAS, Orlando, Jan 2016
A New Empirical Model for Type Ia Supernovae Using Spectrophotometry from the Nearby Supernova Factory (dissertation talk)

OTHER CONFERENCE PRESENTATIONS

- The 228th Meeting of the AAS, Washington DC, January 2018
SNEMO: Type Ia Supernova Modeling with Spectrophotometric Data from the Nearby Supernova Factory
- The 225th Meeting of the AAS, Seattle, January 2015
Building a Type Ia Supernova Model with SNfactory Spectrophotometric Time Series
- Type Ia Supernovae: Progenitors, Explosions and Cosmology, UC Chicago, Sep 2014

Building a Type Ia Supernova Model with SNfactory Spectrophotometric Time Series

- The 223rd Meeting of the AAS, Washington DC, January 2014

Principal Component Analysis of Type Ia Supernova Spectrophotometric Time Series

- The 221st Meeting of the AAS, Long Beach, January 2013

The Effect of K-corrections on Supernova Ia Systematics

REFERENCES

- Nicolas Regnault, Laboratoire de Physique Nucléaire et de Hautes Énergies, IN2P3 (nicolas.regnault@lphne.in2p3.fr)
- Saul Perlmutter, UC Berkeley/Lawrence Berkeley National Laboratory (saul@lbl.gov)
- Alex Kim, Lawrence Berkeley National Laboratory (agkim@lbl.gov)