SOPHIA R FLURY
Curriculum Vitae

Lederle Graduate Research Tower
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RESEARCH SPECIALIZATION AND INTERESTS

Multiwavelength spectroscopy — rest optical and UV spectroscopic observations of galaxies
Galaxies — ionization, gas geometry, stellar populations, feedback and outflows, active galactic nuclei, chemical abundances, Lyman continuum escape
ISM gas — emission and absorption lines, outflow kinematics, excitation, nebular properties and diagnostics, geometry, ionization structure, BPT-style diagnostics
Stellar populations — ages, feedback, spectroscopic features like P-Cygni profiles and photospheric lines, ionizing SEDs and ionizing photon budgets, synthetic stellar populations including BPASS and SB99
Extreme ionization sources — shocks, active galactic nuclei, UV excess, high ionization lines
Activity in low-mass stars — stellar structure, dynamos, activity metrics

EDUCATION

Ph.D. Astronomy 2025 (expected) University of Massachusetts, Amherst, MA
advisor: Anne Jaskot
dissertation: "Clearing the Path to Cosmic Reionization"

M.S. Astronomy 2023 University of Massachusetts, Amherst, MA
advisor: Anne Jaskot
thesis: "New Insights into Lyman Continuum Escape"

M.A. Astronomy 2018 Wesleyan University, Middletown, CT
advisor: Ed Moran
thesis: "Unmixing and Diluting Emission-line Cocktails in the Local Universe"

B.S. (cum laude) Physics (honors) 2012 Dickinson College, Carlisle, PA
advisor: Catrina Hamilton, Margaret Trippe (UMD-CP)
thesis: "X-ray and Optical Properties of *Swift*/BAT AGN"

RESEARCH APPOINTMENTS

UMass Amherst	NASA FINESST award	09/2023 - 08/2025
	HST/COS - LzLCS	01/2020 - 09/2023
Wellesley College	*Cassini*/RSS	09/2018 - 05/2019

TEACHING APPOINTMENTS

UMass Amherst	ASTR 101: Intro Astronomy	08/2019 - 12/2019
Wesleyan University	ASTR 111: Dark Side of the Universe	01/2017 - 05/2018

	ASTR 211: Observational Astronomy	
	Numerical Methods	05/2018 - 08/2018
Dickinson College	Undergraduate Lab Assistant	08/2009 - 05/2012

TECHNICAL SKILLS

Programming — python, R, C, C#, IDL, SQL, fortran; object-oriented, GitHub, readthedocs, documentation (sphynx-style, doc strings, markdown, etc)

Numerical and data analysis methods — root-finding and convergence, statistics (including multivariate methods, treatment of upper limits, and non-Gaussian variates), regression (including MCMC, ODR, and generalized linear models), time series (including periodograms, wavelets, autocorrelations, entropy and complexity)

Software packages — STARBURST99, PyNeb, MAPPINGS, CLOUDY, hoki, calcos, FaintCOS, emcee, numpy, scipy, matplotlib, astropy, lightkurve, XSPEC, sherpa, CIAO, vorbin, ppxf

Observing facilities — *HST*/COS, Gemini/GMOS, Keck/HIRES, *XMM*/EPIC-pn — IFU, long slit, echelle, fiber/aperture spectroscopy

REFEREED PUBLICATIONS

Dors, Oli L. , Valerdi, M., Riffel, R. A., Riffel, R., Cardaci, M. V., Hägele, G. F., Armah, M., Revalski, M., **Flury, S. R.**, Freitas-Lemes, P., Amôres, E. B., Krabbe, A. C., Binette, L., Feltre, A., 2023, MNRAS, 521, 1969. “Chemical abundances in Seyfert galaxies – X. Sulfur abundance estimates”.

Flury, S. R., Moran, E. C., & Eleazer, M.[1], 2023, MNRAS, submitted. “Galactic Outflow Emission Line Profiles: Evidence for Dusty, Radiatively-Driven Ionized Winds in Mrk 462”.

Trebitsch, M., Dayal, P., Chisholm, J., Finkelstein, S. L., Jaskot, A., **Flury, S. R.**, et al. 2023, A&AL submitted. “Reionization with star-forming galaxies: insights from the Low-z Lyman Continuum Survey”.

Nicholson, P. D., French, R. G., McGhee-French, C. A., Longaretti, P.-Y., Hedman, M., El Moutamid, M., Colwell, J., Marouf, E. A., Rappaport, N., **Flury, S. R.**, et al. 2023, Icarus, 390, 115287. “The seven-lobed shape of the outer edge of Saturn's A ring”.

Chisholm, J., Saldana-Lopez, A., **Flury, S. R.**, et al. 2022, MNRAS, 517, 5104. “The far-ultraviolet continuum slope as a Lyman Continuum escape estimator at high redshift”.

Flury, S. R., Jaskot, A. E., Ferguson, H. C., et al. 2022, ApJS, 260, 1. “The Low-redshift Lyman Continuum Survey. I. New, Diverse Local Lyman Continuum Emitters”.

Flury, S. R., Jaskot, A. E., Ferguson, H. C., et al. 2022, ApJ, 930, 126. “The Low-redshift Lyman Continuum Survey. II. New Insights into LyC Diagnostics”.

[1] Master’s student advisee

Marques-Chaves, R., Schaerer, D., Amorin, R. O., Borthakur, S., Chisholm, J, Ferguson, H., **Flury, S. R.**, et al. 2022, A&A, 663, L1. “No correlation of the Lyman continuum escape fraction with spectral hardness”.

Saldana-Lopez, A., Schaerer, D., Chisholm, J., **Flury, S. R.**, et al. 2022, A&A, 663, A59. “The Low-Redshift Lyman Continuum Survey. Unveiling the ISM properties of low-z Lyman-continuum emitters”.

Xu, X., Henry, A., Heckman, T., Chisholm, J., Worseck, G., Gronke, M., Jaskot, A., McCandliss, S. R., **Flury, S. R.**, et al. 2022, ApJ, 933, 202. “Tracing Lyα and LyC Escape in Galaxies with Mg II Emission”.

Wang, B., Heckman, T. M., Amorín, R., Borthakur, S., Chisholm, J., Ferguson, H., **Flury, S. R.**, et al. 2021, ApJ, 916, 3. “The Low-redshift Lyman-continuum Survey: [S II] Deficiency and the Leakage of Ionizing Radiation”.

Flury, S. R., & Moran, E. C. 2020, MNRAS, 496, 2191. “Chemical abundances in active galaxies”.

CONFERENCE PRESENTATIONS / COLLOQUIA / INTERVIEWS

Johns Hopkins University	Fall 2023	astro coffee
University Cidade de São Paulo	Summer 2023	colloquium
UVGalaxies2023	Summer 2023	contributing talk
First Light with JWST	Spring 2023	poster
Lyman Continuum Labyrinths	Spring 2023	contributing talk
AAS Journal Author Series	Summer 2022	interview
Sazerac SIP Early Galaxy Formation	Fall 2021	contributing talk
Sazerac 2.0	Summer 2021	contributing talk
Chemical Abundances in Gaseous Nebulae III	Spring 2021	contributing talk

PROFESSIONAL/INSTITUTIONAL SERVICE

ApJ	Referee	2022 - present
Wesleyan University	Bridge program mentor	2021 - present
Wesleyan University	Public Observing	2017 - 2018
Macdonough Elem, CT	Planetarium Shows	2017
Wesleyan University	Public science talks	2017 - 2018
Dickinson College	Founded and ran public science activity fair	2010 - 2012