Curriculum Vitae

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Education

- **University of Arizona, Department of Astronomy** — **Tucson, AZ**
  Ph.D., Astronomy — April 2009
- **St. Kliment Ohridsky University, Department of Physics** — **Sofia, Bulgaria**
  B.S., Physics with Honors — July 2002
  Majors: Astronomy, Optics & Spectroscopy

Professional Experience

Yale University, Department of Astronomy — **New Haven, CT**
Associate Research Scientist — 2014 – present
Postdoctoral Researcher — 2011 – 2014

- Project Manager for the 3D-HST treasury survey.
- Manage science and analysis work of the 3D-HST team which consists of $\sim$ 40 scientists worldwide. Work with researchers to maximize the scientific output by tailoring the data products to the scientific needs. Interface between the data team and collaborators to provide science colleagues with the necessary data, resulting in over 40 peer reviewed publications from the team. Coordinated 6 bi-annual international collaboration meetings and organized a special session during AAS 225 which was attended by $\sim$100 scientists.
- Lead and coordinate the 3D-HST data team of $\sim$10 people worldwide. Organize weekly telecons. Responsible for the reduction and analysis of $>$ 600 orbits of Hubble ACS and WFC3 spectroscopic observations and $>$ 1000 orbits of Hubble imaging (including all WFC3 CANDELS observations).
- Responsible for producing, organizing and delivering internal and external data releases, and compiling accurate and comprehensive documentation. The team has done 4 internal and 3 external data releases (see van Dokkum et al., 2013; Skelton et al., 2014). A final release is planned for March 2015. Work with the MAST team (A. Koekemoer et al.) to deliver the high-level science products for permanent storage.
- Oversee the development of a dedicated Python pipeline for the reduction of HST grism spectra. Carried out testing and debugging in tandem with the pipeline developer Gabriel Brammer. Pipeline is used by a number of HST programs.
- Created and maintain the 3D-HST website (`http://3dhst.research.yale.edu`) which provides up-to-date information on the status of the project and data downloads. The site has had $\sim$4,000 visitors and $\sim$300 registered data users. Currently developing a database, API and web search capabilities to enable access to the 3D-HST data in a manner similar to the SDSS browser.
- Consult PIs on the reduction and analysis of their WFC3 grism and imaging data. Currently working with the following programs: 12590, 12896, 13437. Collaborate on follow-up surveys in the deep fields such as KMOS-3D (PI: Natascha Förster-Schreiber) and MOSDEF (PI: Mariska Kriek).

Carnegie Institution of Washington, Carnegie Observatories — **Pasadena, CA**
Postdoctoral Researcher — 2009 – 2011

- Led the spectroscopic follow-up for the NewHα survey - a project led by Janice Lee to obtain Hα-selected samples at intermediate redshift. Planned and executed 12 nights of observations on the Magellan telescope. Reduced and analyzed the data yielding spectroscopic confirmations for a significant fraction of the sample. Delivered data to the collaboration in the form of catalogs and spectra. Created a MySQL database of the final multi-wavelength dataset. This work is described Momcheva et al. (2013) and the data are published in de los Reyes et al. (2014).

- Led the spectroscopic follow up for Spitzer-selected cluster candidates with Magellan which yielded the discovery of a cluster at z=1.6 - the highest redshift cluster at the time (Papovich et al., 2010). Actively participate in follow-up studies.

University of Arizona, Department of Astronomy **Tucson, AZ**
Graduate Research Assistant 2002 – 2009

- Carried out a survey of the environments of 28 strong gravitational lens galaxies: observations of $> 20{,}000$ targets were done over ~ 40 nights of observations with MMT and Magellan, yielding $\sim$10,000 unique new redshifts. Collaborated on a pipeline to perform uniform analysis on data from four different spectrographs. Delivered catalogs of redshifts, spectral fits and emission line measurements for the complete sample to the collaboration, which have been used in the thesis work of two students. Preliminary results were published in Momcheva et al. (2006) and Williams et al. (2006); a final catalog paper is in review.

Technical Skills

- Proficient in analyzing observations from the ACS and WFC3 instruments on HST.
- Proficient in Python, IDL, Perl, SQL, C. Have extensively used scientific software packages under IRAF and IDL. Experienced with version control systems git and svn. Working knowledge of web development with HTML, CSS, PHP, JS and Python.
- Familiar with data science and high-performance scientific computing methods and techniques such as relational databases (MySQL, PostgreSQL), MapReduce (Hadoop), cloud computing (Amazon Web Services), parallel computing and machine learning.
- Expert in system administration of Mac OS X. Comfortable in Linux and Windows.
- Led proposals, planned and carried out >50 nights of observations with Keck, Magellan, MMT, KPNO 4m, KPNO 0.9m, primarily optical and near-IR spectroscopy.

Research Interests

- Galaxy evolution and star-formation as a function of environment
- Groups of galaxies, evolution and formation of groups
- Gravitational lensing, environments of gravitational lenses

Conferences and Research Talks (2014)

- Invited talk: "Grism Spectroscpy" August, 2014
  STScI Calibration Workshop, Baltimore, MD
- Contributed talk: "3D-HST: The Status of the Survey" May, 2014
  3D-HST Team Meeting, Heidelberg, Germany
- Contributed talk, "3D-HST: Overview and Early Science Results" March, 2014
  Science with the Hubble Space Telescope IV Conference, Rome, Italy
- FLASH talk: "3D-HST: Overview and Early Science Results" February, 2014
  University of Arizona, Steward Observatory, Tucson, AZ
- Colloquium: "Observing Galaxy Evolution with the 3D-HST Survey" January, 2014
  Texas A&M University, College Station, TX
- Contributed talk: "Science Highlights from the 3D-HST Survey" January, 2014
  223rd AAS Meeting, Washington, DC