

KRZYSZTOF SUBERLAK

Curriculum Vitae

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Interests	Astrostatistics and data mining. I study how physical properties of quasars, such as black hole mass or accretion disk luminosity, correlate with the information contained in the observed light curves.	
Education	University of Washington, Seattle, WA PhD Candidate in Astronomy	2013 – present
	University of Oxford, UK MPhys Physics	2008 – 2012
Computer skills	Python open data science stack (NumPy, SciPy, AstroPy, Pandas, Matplotlib, Scikit-learn, iPython, Jupyter-Lab, AstroML, etc.); Github (version control); UNIX / Linux based systems; LSST science pipelines ; Database manipulation: SQL , Apache-Spark, AXS, Dask, LSD; Collaboration tools: Jira , Confluence , Docushare, LaTeX , Zenodo.	
Selected Graduate Research	<i>LSST Crowded Fields</i> : testing the LSST Stack performance	2018
	Comparing the results of LSST Stack performance to the state-of-the-art DECAPS pipeline. <ul style="list-style-type: none">– Developed data processing pipeline, analyzed the results– Made recommendations for photometric accuracy and astrometric precision in DMTN077 “LSST Fall 2017 Crowded Fields Testing”	
	<i>LSST PDAC</i> : user testing the Prototype Data Access Center <ul style="list-style-type: none">– tested the functionality of PDAC, as part of DM-SST– made recommendations for the DM-SST team during telecons, and summarized in the report DMTR022 “Prototype Data Access Center: User Report”	2017
	<i>eScience Data Science for Social Good</i> Summer work at the University of Washington eScience Institute, with Dr. Ariel Rokem and Dr. Bryna Hazelton on a Gates Foundation project “ Predictors of Permanent Housing for Homeless Families ” <ul style="list-style-type: none">– cleaned the heterogeneous datasets describing homeless shelters in King, Pierce and Snohomish counties– developed python code with hierarchical clustering to define families based on coincidence of entry times and IDs	Jun 2015 – Aug 2015
Employment	<i>University of Washington, Research Assistantship</i> Graduate Research Assistantship with Dr. Željko Ivezić	Jan 2016 – present
	<i>University of Washington, Teaching Assistantship</i> Graduate Teaching Assistantship	Oct 2013 – Dec 2015
	<i>Nicolaus Copernicus Astronomical Center, Poland, Research Associate</i> Research with Dr. Agata Rozanska <ul style="list-style-type: none">– Measured Active Galactic Nuclei spectra from the VIMOS Public Extragalactic Redshift Survey– Improved classification scheme and data reduction software	Feb 2013 – Jul 2013
	<i>University of Oxford, Research Studentship</i> Research with Dr. Leigh Fletcher and Prof. Pat Irwin <ul style="list-style-type: none">– Analyzed the infrared data of Jupyter atmosphere from Cassini– Verified the possible depth of measurement using ethane spectral lines.	Oct 2012 – Dec 2012
	<i>University College of London, Nuffield Fellowship</i> Undergraduate Research at the Mullard Space Science Laboratory, UK, with Prof Andrew Coates and Dr Adam Masters <ul style="list-style-type: none">– Analyzed the location of Saturns plasmopause using Cassini Plasma Spectrometer (CAPS) Electron Spectrometer (ELS) data	Jun 2011 – Aug 2011

Under-graduate Research	<i>University of Oxford, AOPP Research Assistantship</i>	Jun 2011 – Aug 2011
	Summer research experience with Dr. Neil Bowles and Dr. Ian Thomas at the University of Oxford Oceanic and Planetary Physics sub-department	
	<ul style="list-style-type: none"> – Performed laboratory measurements and data analysis supporting the Diviner instrument on the Lunar Reconnaissance Orbiter – Determined the grain size distribution of the lunar soil equivalent, to aid modelling of thermal emission of lunar regolith 	
	<i>University of Oxford, Masters Thesis</i>	Jan 2012 – Apr 2012
	Measuring Expansion of the Universe with Supernovae with Dr. Fraser Clarke and Dr. Mark Sullivan	
	<ul style="list-style-type: none"> – Observed, reduced, and analysed data for new supernovae – Measured the Hubble constant with lightcurve fitting software 	
	<i>Nicolaus Copernicus Astronomical Center, Warsaw, Poland</i>	Jun 2012 – Aug 2012
	Research at the Polish Academy of Sciences with Dr. Agata Różańska	
	<ul style="list-style-type: none"> – Analyzed Chandra x-ray data with CIAO, performed spectroscopy and imaging of Sagittarius A* – Investigated the spectroscopy of x-ray filaments, and examined the morphology of the region in various energy bands to find the sources of emission. 	
Publications	<ul style="list-style-type: none"> – Suberlak, K.L., Ivezić, Ž., MacLeod, C.L., Graham, M., Branimir, S. “Solving the puzzle of discrepant quasar variability on monthly time-scales implied by SDSS and CRTS data sets.” Monthly Notices of the Royal Astronomical Society, Volume 472, Issue 4, p.4870-4877 (2017) 	
Honors And Awards	<ul style="list-style-type: none"> – Data Intensive Research in Astrophysics and Cosmology (DIRAC) at the University of Washington: DIRAC Institute Fellow (2016-present) – University of Washington eScience Institute Data Science for Social Good Fellow (2015-present) – Fellow of the Royal Astronomical Society (2008-present) 	
Professional Presentations	<ul style="list-style-type: none"> – Poster: Astrophysical Frontiers in the Next Decade and Beyond: Planets, Galaxies, Black Holes, & the Transient Universe. Portland, OR. June 26, 2018 – Poster: “Bayesian inference in forced photometry” at Northwest Astronomy Meeting, Bellinham, WA. Oct 29, 2016 – Poster: “What to do with negative fluxes?” at the intermediate Palomar Transient Factory (iPTF) Summer School, California Institute of Technology. Pasadena, CA. July 18, 2016 – Poster: “Solving the puzzle of discrepant quasar variability on monthly time scales implied by SDSS and CRTS datasets.” 227th American Astronomical Society Meeting. Kissimmee, FL. January 6, 2016. – Poster: “New Constraints on Quasar Variability based on 8,000 SDSS Stripe 82 Quasars with both SDSS and CRTS Lightcurve Data.” 225th American Astronomical Society Meeting. Seattle, WA. January 6, 2015. 	
Workshops and Conferences	<ul style="list-style-type: none"> – LSST 2017 Project and Community Workshop. Tucson, AZ. Aug 14-18, 2017 – Detecting the Unexpected: Discovery in the Era of Astronomically Big Data. Space Telescope Science Institute, Baltimore, MD. Feb 27 - March 2, 2017 – Summer School 2016 Astrostatistics & Data Mining. International Max Planck Research School for Astronomy & Cosmic Physics at the University of Heidelberg, Germany. Sept 12-16, 2016 	
Teaching Experience	<ul style="list-style-type: none"> – ASTR150 The Planets: Teaching assistant for three quarters (Winter 2013, Summer 2014 for Dr Nicole Silvestri; Spring 2015 for Dr Toby Smith) – ASTR101 Introduction to Astronomy: Teaching assistant for eight quarters (Fall 2013, Fall 2015, Summer 2016, Autumn 2016 for Dr Ana Larson ; Spring 2014, Spring 2016 for Dr Chris Laws; Winter 2015, Winter 2016 for Dr Oliver Fraser) 	