Curriculum Vitae

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Jens-Kristian Krogager

Senior Research and Teaching Assistant
University of Geneva
Chemin Pegasi 51
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DATE OF BIRTH March 12, 1988; Holbæk, Denmark
NATIONALITY Danish

EDUCATION

Ph.D., 2011 – 2015, Astronomy — advisor: Prof. Johan P. U. Fynbo.
Dark Cosmology Centre, University of Copenhagen
Title: *"Galaxies in the early universe characterized in absorption and emission"*
Defended on Nov 6th 2015

M.S., 2010 – 2013, Astronomy — advisor: Prof. Johan P. U. Fynbo
Dark Cosmology Centre, University of Copenhagen
Joint Master's and Ph.D. programme.

B.S., 2006 – 2009, Physics and Astronomy — advisor: Dr. Uffe Gråe Jørgensen
Niels Bohr Institute, University of Copenhagen
Title: *"Possibilities for exoplanet detection using gravitational microlensing"*

RESEARCH EXPERIENCE

2021 – Feb — **Université de Genève**, Switzerland
Senior Research and Teaching Assistant, with Dr. A. De Cia

2018 – 2021 Feb Feb — **Institut d'Astrophysique de Paris**, France
Postdoctoral researcher, funded by ANR grant, with Dr. P. Noterdaeme

2016 – 2018 Jan Jan — **Institut d'Astrophysique de Paris**, France
Postdoctoral research fellow,
funded by the Danish Council for Independent Research

2015 – 2016 Dec Jan — **Dark Cosmology Centre, University of Copenhagen**, Denmark
Postdoctoral Researcher, working with Dr. L. Christensen

2012 – 2014 Dec Dec — **European Southern Observatory**, Santiago, Chile
PhD Studentship, working with Dr. C. Ledoux

LANGUAGES [ILR SCALE]

Danish (5, native); **English** (4); **French**, **Spanish** (3); **German** (2); **Japanese** (1)

OBSERVING EXPERIENCE

As PI: NTT at La Silla; VLT/X-shooter; VLT/SINFONI; VLT/ESPRESSO; Nordic Optical Telescope (NOT)

As Co-I: VLT/UVES; Southern African Large Telescope (SALT); ALMA; NOEMA; Gran Telescopio Canarias (GTC); Giant Metrewave Radio Telescope (GMRT); MeerKAT (SKA precursor in South Africa); *Hubble Space Telescope*: WFC3, STIS

As observer: VLT/X-Shooter; NOT/ALFOSC; Isaac Newton Telescope; NTT/EFOSC2

Technical project at ESO/VLT characterizing the 'diaphragm observing mode' for X-Shooter working with instrument scientist, Dr. C. Martayan (2013).

INSTRUMENTATION AND INTERNATIONAL SURVEYS

4MOST Community Survey
PI of the 4MOST-Gaia Purely Astrometric Quasar Survey (4G-PAQS; 30 CoIs)
CoI of the Chilean AGN/Galaxy Evolution Survey (ChANGES)

Taipan Multi-object Spectrograph
Co-PI of the TAIPAN Red Exploratory Quasar Survey (T-REQS) during commissioning of the new TAIPAN spectrograph at the UK Schmidt Telescope at Siding Spring Observatory, Australia.

WEAVE-QSO survey
CoI — Responsible for target selection and data quality

MeerKAT Absorption Line Survey (MALS)
CoI — Working group chair for optical spectroscopic follow-up

NOT Transient Explorer (NTE)
CoI — Instrument and pipeline development for the Nordic Optical Telescope

Maunakea Spectroscopic Explorer (MSE)
Science Team Member and co-author of the science case document

GRANTS AND FELLOWSHIPS

2017, 2019 **ESO Scientific Visitor Programme, ESO Santiago, Chile**
5 and 6 weeks, respectively, working with Dr. C. Ledoux and Dr. A. Smette.

2015 **MOBILEX fellowship — Danish Council for Independent Research**
"Chemical Enrichment and Dust in the Early Universe", Grant ID: DFF - 5051-00115
2 year research grant, Jan 2016 – Jan 2018 (2,000,000 DKK = ~267,000 €)

2012, 2014 **Instrument Center for Danish Astrophysics**
Two travel grants (2 x 2000 €) to go to the Nordic Optical Telescope

2011 **Danish Agency for Science and Innovation**
Grant for ESA summer school on development of space-based instrumentation entitled "Star Formation across the Universe", Alpbach, Austria (2000 €).

PROGRAMMING AND DATA ANALYSIS

Programming languages: Python, HTML+css, JavaScript, IRAF, SQL, Haskell

Data reduction: Long-slit spectroscopy, echelle spectroscopy (X-Shooter), integral-field spectroscopy (SINFONI), imaging and slit-less spectroscopy (*HST*/WFC3)

Statistics: Bayesian parameter estimation (incl. MCMC methods)

Software Development:

`PyNOT` A full pipeline for spectroscopy and imaging from NOT/ALFOSC written entirely in Python. The pipeline includes a graphical user interface to handle spectral extraction, wavelength and flux calibration. Publicly available on GitHub and PyPI.

`VoigtFit` Absorption line analysis with interactive graphic interface written in pure Python. Publicly available on GitHub and the *Astrophysics Source Code Library.*

`xsh` Automated data-organizer and reduction pipeline manager for VLT/X-shooter

TEACHING

2021 — **Supervision of 2 PhD students: C. Konstantopoulou and T. Ramburuth-Hurt**
University of Geneva. Principal advisor: A. De Cia.
During spring of 2021 I prepared a proposal writing course guiding the two students on their first respective proposals for the VLT and HST.
I also prepared an introductory course on absorption line fitting.

2020 **Internship of high school student: A. Dordevic**
One week internship in Feb 2020. The student worked on a project to determine the mass of a supermassive black hole using spectroscopy as well as a project to present a summary of a scientific text (oral presentation in French).

2016 — 2019 **Informal co-supervision of PhD student: A. Ranjan**
Institut d'Astrophysique de Paris. Advisors: P. Noterdaeme & P. Petitjean.
I brought the student with me on an observing trip to the NOT, La Palma, Spain to teach observational astronomy and data reduction of long-slit spectroscopy.

2017 **NEON summer school in observational astronomy**
Isaac Newton Telescope and Nordic Optical Telescope, La Palma, Spain
15 days mentoring a group of 4 students.
Responsabilities: preparation and execution of observations, data reduction, written and oral presentation

2015 **Invited lecture for master's course "Galaxy Formation"**
Niels Bohr Institute, University of Copenhagen
2 x 45 min entitled "Damped Lyman-α Absorbers as probes of Galaxy Evolution"

2012, 2014 **T.A. for the Observing School at the Nordic Optical Telescope**
Organized by the Niels Bohr Institute, University of Copenhagen
3 nights at the telescope each year, 7.5 ECTS each course.

2012 **T.A. in Electromagnetism**
Niels Bohr Institute, University of Copenhagen, 30h in total, 7.5 ECTS

INSTITUTIONAL RESPONSABILITIES

2019 – 2021 Postdoc representative at the institute counsil at IAP, France

2018 – 2021 Organization of weekly social events for physics postdocs across Paris (virtually during Covid-19 restrictions)

2017 Organizer of *"VoigtFit Workshop"*, Dark Cosmology Centre, Denmark

2017 Member of SOC for Special Session at EWASS, Prague, Czech Republic *"Damped Lyman-alpha Absorbers in Absorption and Emission"*

2013 Member of LOC for ESO workshop, *"Deconstructing Galaxies"*, Chile

2010 – 2015 Organization of astro-ph journal club and seminars at Dark Cosmology Centre

PUBLIC OUTREACH

2020 **"The evolution of baby galaxies"**, public lecture, Brorfelde, Denmark
Re-scheduled for June 12th, 2021 due to the Covid-19 pandemic

2019 – 2020 **"Nuit de l'Astronomie"**, IAP, France (member of organizing committee)

2018 **"Fête de la Science"**, IAP, France

2013 **"New knowledge about early galaxies"**
Press release in English distributed by the Niels Bohr Institute, Denmark

2012 **"Baby galaxies grew up quickly"** (video interview)
Press release in English distributed by the Niels Bohr Institute, Denmark

PUBLICATIONS

Number of refereed articles: 51 — as first author: 12

h-index: 18

Active reviewer for MNRAS, ApJ, A&A, PASJ