



CHRISTINA HEDGES

EXOPLANET ATMOSPHERES

CONTACT

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REFERENCES

SIMON HODGKIN

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VASILY BELOKUROV

DIRECTOR OF GRADUATE
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(+44) 01223 337515
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PROFILE

I study exoplanet atmospheres as a PhD student at the University of Cambridge. This has involved both work with HST data on transmission spectroscopy and more theoretical work with molecular cross sections and the role of pressure broadening. Most of my work involves building pipelines and codes to reduce data.

RESEARCH EXPERIENCE

OBSERVATIONS OF EXOPLANET ATMOSPHERES

SIMON HODGKIN | OCT 2014 - CURRENT

- Developing pipeline to reduce and analyse HST data and produce transmission spectra.

MOLECULAR CROSS SECTIONS FOR EXOPLANET ATMOSPHERES

NIKKU MADHUSUDHAN | SEP 2013 - OCT 2015

- Developed and analysed pressure broadened molecular cross sections for use in exoplanet atmospheres.

ASTROSEISMOLOGY OF RED GIANTS

SAVITA MATHUR | JUN 2012 - SEP 2012

- Investigated the asteroseismic signals from red giants in the *Kepler* data sample.

EDUCATION

PHD ASTRONOMY

UNIVERSITY OF CAMBRIDGE | 2013 - 2017

MSC PHYSICS WITH ASTROPHYSICS FIRST CLASS (HONS)

UNIVERSITY OF BIRMINGHAM | 2009 - 2013

SKILL KEYWORDS

- IDL
- C++
- Observational Data
- Pipeline Building
- Pressure Broadening
- Molecular Spectroscopy
- HST WFC3
- Transmission Spectroscopy
- Exoplanet Characterisation
- Kepler

PUBLICATIONS

Christina Hedges and Nikku Madhusudhan
Effect of Pressure Broadening on Molecular Absorption Cross Sections in Exoplanetary Atmospheres
MNRAS doi:10.1093/mnras/stw278



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TEACHING

INTRODUCTION TO C++

INSTITUTE OF ASTRONOMY, CAMBRIDGE | NOV 2015

- Developed and delivered an introductory course on C++ for new graduate students which consisted of 4 hour long workshops with example sheets.

CONFERENCES

UK EXOPLANET COMMUNITY MEETING - UNIVERSITY OF EXETER

30TH MARCH - 1ST APRIL 2016

EXOMOL CONFERENCE - UNIVERSITY COLLEGE LONDON

24 - 26 JULY 2015

UK EXOPLANET COMMUNITY MEETING - UNIVERSITY OF WARWICK

30TH MARCH - 1ST APRIL 2015

ATMOSPHERE SCIENCE IN THE CONTEXT OF CHEOPS, TESS, K2 AND PLATO

2ND-4TH MARCH 2015

UK EXOPLANET COMMUNITY MEETING - UNIVERSITY OF CAMBRIDGE

14TH-16TH APRIL 2014

TRAINING

EXOPLANETS SUMMER SCHOOL - LA PALMA

SEPTEMBER 2014

HST DATA REDUCTION TRAINING - MARYLAND (NASA GSFC)

APRIL-MAY 2014

SCIENCE SEMINARS

CAMBRIDGE: PRESSURE BROADENING IN EXOPLANET ATMOSPHERES. 11TH

MAY 2016

UCL (INVITED TALK): MOLECULAR SPECTROSCOPY OF EXOPLANET

ATMOSPHERES. 26TH FEBRUARY 2016

EXOMOL: MOLECULAR SPECTROSCOPY FOR FUTURE INSTRUMENTS. 25TH

JULY 2015

OUTREACH EVENTS

INSTITUTE OF ASTRONOMY OUTREACH EVENING (2015)

"THE SCALE OF THE UNIVERSE" [~120 ATTENDEES]

UNIVERSITY OF CAMBRIDGE SCIENCE FESTIVAL (2015)

"IS THERE AN EARTH 2.0?" [~100 ATTENDEES]

INSTITUTE OF ASTRONOMY OUTREACH EVENING (2014)

"DETECTING EXOPLANET ATMOSPHERES" [~100 ATTENDEES]

Throughout my PhD I have been very interested in public outreach and often give public talks and engage in the Cambridge Science Festival, telescope tours, outreach evenings and external events such as with schools and the Cambridge Science Museum. I am particularly in engaging girls and women in STEM subjects.