
Curriculum Vitae

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PUBLICATION SUMMARY:

- **Three most influential first author publications:**
 - C. Wegg, O. Gerhard, "MAPPING THE THREE-DIMENSIONAL DENSITY OF THE GALACTIC BULGE WITH VVV RED CLUMP STARS", *MNRAS*, **435**, 1874 (2013). **189 Citations.**
 - C. Wegg, O. Gerhard, M. Portail, "THE STRUCTURE OF THE MILKY WAY'S BAR OUTSIDE THE BULGE", *MNRAS*, **450**, 4050 (2015). **134 Citations.**
 - C. Wegg, O. Gerhard, M. Bieth, "THE GRAVITATIONAL FORCE FIELD OF THE GALAXY MEASURED FROM THE KINEMATICS OF RR LYRAE IN GAIA", *MNRAS*, **450**, 4050 (2019). **24 Citations.**
- Full list of publications attached or see orcid.org/0000-0001-6240-8771
- 1,128 total citations, *h*-index of 18 • 501 citations to first author papers, first author *h*-index of 8
- 368 citations normalized by author count, normalized *h*-index of 11
- First or second author on 3 of the top 20 cited papers on the Galactic Bulge since beginning working on the Milky Way in 2013 (there have been > 500 articles in this time)
- Presented talks at 10 international conferences in the past 3 years alone, including 4 invited review talks

EDUCATION:

Caltech; PHYSICS PH.D; ADVISOR: STERL PHINNEY (2013)

- Thesis on "The dynamics of white dwarfs, black holes and stellar cusps".
- Won 2009 Caltech prize for outstanding undergraduate teaching
- Won 2008 Caltech prize for outstanding graduate teaching

University College London; PHYSICS MSCI, 1st CLASS WITH HONORS (2003)

- 1st class in every course taken
- 100% score in more than 2/3rds of courses taken
- Highest marks in Physics department every year
- Won departmental prize for best Physics student every year (4 prizes total)

RESEARCH AND WORK EXPERIENCE:

- **LABORATOIRE LAGRANGE (UMR 7293) , COTE D'AZUR OBSERVATORY, NICE**
Marie Curie Fellowship, Nov 2018 Onwards
 - Awarded a highly competitive Marie Skłodowska-Curie Individual Fellowship (€173k) from the EU. Hosted by the Galaxy and Cosmology group (group leader: Mathias Schultheis).
 - Project modelling and interpreting Gaia data together with spectroscopy on the inner Milky Way
- **DYNAMICS GROUP, MAX-PLANCK-INSTITUT FÜR EXTRATERRESTRICHE PHYSIK, Germany**
Post-Doctoral Scholar, Sep 2012-Sep 2018
 - Utilized red clump stars as standard candles to non-parametrically measure and map the three dimensional structure of the bulge galaxy. **Paper cited >150 times in 5 years.**
 - Showed that the Milky Way has a 5kpc long bar that is naturally connected to the barred bulge of the inner Milky Way. **Paper cited >100 times in 3 years.**

- Numerous collaborations. The most influential work *not discussed in the completed research document* has shown: (a) [Dynamical models](#) and [made-to-measure models](#) which show Andromeda has a composite bulge containing both a classical and pseudo-bulge (unlike the Milky Way which is likely entirely pseudo-bulge). (b) That the rotation rate of the bar is significantly slower than previously thought, and that [this can explain the Hercules stream of stars in the solar neighbourhood](#). (c) [The most accurate measurements of the mass of Sgr A*](#).
- Referee for MNRAS, A&A, ApJ and ApJL.
- [THEORETICAL ASTROPHYSICS](#), CALIFORNIA INSTITUTE OF TECHNOLOGY, USA
Teaching and Research Asst. During PhD, Oct 2003-June 2012
 - PhD work on topics in stellar dynamics, largely projects on the dynamics of stars around supermassive black holes.
 - Simulations of stellar dynamics around supermassive black holes. Wrote galactic dynamics code which demonstrated that binary supermassive black holes can be identified by the large number of tidal disruption flares.
 - Incorporated general relativity into stellar dynamics code, and showed that the rate of extreme mass ratio inspirals (EMRIs) from binary supermassive black holes is greatly enhanced.
 - PhD longer than departmental average of 6 years due to medical problems that are now resolved.
- [PELIKON](#), CAMBRIDGE, UK
Electronic Engineer, 2002-2003
 - Responsible for the design and prototyping of the first electroluminescent watch from scratch. Designed and prototyped electronics, wrote embedded software.
- [CAMBRIDGE CONSULTANTS](#), CAMBRIDGE, UK
Electronic Engineering, 1998-1999, Summers 2000-2002
 - Worked on numerous large projects for engineering and technology consulting firm.

SUPERVISING AND MENTORING EXPERIENCE

- Co-advised/mentored three PhD students, and two summer students, while postdoc at MPE (together with group leader Ortwin Gerhard).
- Results published in 4 second author papers with PhD student as lead author, and 8 total PhD student led papers. Together these papers have 308 citations.
- Both summer students have gone onto study for PhDs (Cornell and NYU).

TEACHING

- Caltech: **Analog Electronics for Physicists** : Topics included operational amplifiers, transistors and computer data acquisition. The course culminated in a two-week project of the student's choosing.
Responsibilities: Teaching section including class recitation, supervising laboratories, grading and assigning students final grades. Sole teacher and point of contact for students. Projects supervised including a wireless mouse, a superheterodyne receiver, and a discrete op-amp.
- Caltech: **Sophomore Lab** Experiments in electromagnetic phenomena, atomic and nuclear physics.
Responsibilities: Teaching section including class recitation, supervising laboratories, grading and assigning students final grades. Sole teacher and point of contact for students. In addition designed and implemented a novel experiment that allows students to measure and check the energy-time uncertainty relation using a measurement of the lifetime of the 14.4 keV state of ^{57}Fe and the Mossbauer effect.
- Teaching assistant for **Order of Magnitude Physics, High Energy Astrophysics** (Prof: Sterl Phinney) and **Classical Physics**, (Prof. David Politzer). Responsibilities typically holding class recitation, office hours, and grading.

PRIZES

- 2009 Caltech prize for outstanding undergraduate teaching
- 2008 Caltech prize for outstanding graduate teaching
 - Winning the two university wide teaching prizes in consecutive years was unprecedented
- 2003 UCL Deans List for outstanding academic performance (awarded to top 5% graduating students)
- 2000-2003 Prize for best UCL Undergraduate Physics Student every year of degree (4 prizes total)

ONGOING OBSERVATIONS AND EXTERNAL FUNDING

- €173k – EU2020 Marie Skłodowska-Curie Fellowship (2018-2020)
- WEAVE Deputy Science Team Lead (STL) for Galactic Archeology (2019-2025) – Galactic Archeology will receive 5.5 million fibre-hours using the WEAVE instrument on WHT as guaranteed time from November 2020-2025. Vanessa Hill is the STL and I am deputy STL.
- Survey working group (SWG) representative for the WEAVE Galactic Archeology High Latitude sub-survey (2018-2025). This sub-survey will receive 1.6 million fibre-hours. I am responsible for observation submission, and communications between the sub-survey team and the wider WEAVE project.
- €5k – Amazon Web Services (AWS) Cloud Computing Grant (2019-2020)
- PI of 14 hours of VLT-FLAMES time to take spectra of red clump giants in the Milky Way's bar (2020)
- VVVX co-I – 4000 hours on VISTA