

## C. V.

### Genevieve J. Graves

UC Berkeley, Department of Astronomy  
B-20 Hearst Field Annex #3411, Berkeley, CA 94720  
tel: +1 510 847 6010, email: graves@astro.berkeley.edu

#### Education

---

Ph.D.	Astronomy & Astrophysics, UC Santa Cruz, <i>Advisor</i> : Sandra Faber	2009
Part II	Linguistics Tripos, University of Cambridge (U.K.)	2001–2002
B.A.	Astronomy & Astrophysics & Physics, <i>magna cum laude</i> , Harvard	2001

#### Employment

---

Miller Fellow, UC Berkeley	2009–present
Graduate Student Researcher, UC Santa Cruz, <i>Advisor</i> : Sandra Faber	2004–2009
Teaching Assistant, UC Santa Cruz	2004, 2007

#### Honors & Awards

---

Miller Fellowship, UC Berkeley	2009–2012
Einstein Fellowship	2012
Russell Fellowship, Princeton	2009 ( <i>declined</i> ), 2012
Clay Fellowship, Harvard	2009 ( <i>declined</i> ), 2012
Hubble Fellowship	2009 ( <i>declined</i> )
Glasstone Fellowship, Oxford	2009 ( <i>declined</i> )
Chancellor’s Dissertation Year Fellowship, UC Santa Cruz	2008–2009
ARCS Foundation Fellowship	2008–2009
Whitford Prize, UC Santa Cruz Department of Astronomy & Astrophysics (for excellence in first two years of graduate work)	2005
Regent’s Fellowship, UC Santa Cruz	2003–2004
Rotary Ambassadorial Fellowship (to Cambridge, U.K.)	2001–2002
Leo Goldberg Prize, Harvard University Department of Astronomy & Astrophysics (for best astrophysics undergraduate thesis)	2001

#### Successful Grants & Proposals

---

Scientific PI of successful 48-orbit/\$166K Hubble Space Telescope proposal: *UV imaging to determine the location of residual star formation in galaxies recently arrived on the red sequence.* (Cycle 16, Administrative PI: Faber)

#### Service

---

Referee: ApJ, ApJL, MNRAS	2009–present
Hubble Space Telescope Cycle 18 TAC-Exgal Panel 3	2010
Elected Director of Astronomy Graduate Students (representative to the faculty, manager of official grad activities)	2007–2008
Graduate Student on Search Committee for new Lick Observatory Director	2005–2006

## Research Interests

---

Galaxy Formation and Evolution  
Weak Lensing, Cosmology  
Dark Matter, Large Scale Structure  
Stellar Populations of Galaxies  
Chemical Evolution and Abundance Patterns of Galaxies  
AGN Activity in Galaxies

## Graduate Student Collaborators / Mentees

---

Eric Huff, UC Berkeley <i>A new method to measure gravitational magnification due to weak lensing.</i>	Ph.D. Expected 2012
Jeremy Murphy, UT Austin <i>Stellar population gradients and kinematics in local early type galaxies.</i>	Ph.D. Expected 2012
Judy Cheng, UC Santa Cruz <i>Comparing automated and visual morphologies of non-star-forming galaxies.</i>	Ph.D. Expected 2012
Eric Lopez, UC Santa Cruz <i>Galaxy ages and morphologies as a function of dark matter halo mass.</i>	Ph.D. Expected 2013
Lauren Porter, UC Santa Cruz (Physics) <i>Stellar populations throughout the Fundamental Plane in semi-analytic models.</i>	Ph.D. Expected 2013
Jerome Fang, UC Santa Cruz <i>The UV morphologies of early type galaxies.</i>	Ph.D. Expected 2014

## Undergraduate Student Mentees

---

Anthony Paredes, UC Berkeley <i>Comparing the stellar populations of elliptical galaxies to those of bulge-dominated passive spirals.</i>	B.A. Expected 2012
Patrick Fitzpatrick <i>Comparing the stellar populations of passive galaxies in different environments.</i>	B.A. Expected 2013

## Observing & Software Experience

---

Keck/DEIMOS multi-object optical spectroscopy (7 nights)  
Keck/LRIS long-slit spectroscopy (6 nights)  
Palomar/DoubleSpec long-slit spectroscopy (3 nights)  
Lick Shane 3m KAST optical spectrograph (1 night)  
Wrote EZ\_Ages software package (IDL code for measuring absorption indices  
and finding best-fitting abundance pattern for an observed spectrum)

## Colloquia and Invited Talks

---

Massachusetts Institute of Technology, Cambridge, MA <i>Gleaming Through the Dark: Passive Galaxies as Probes of Dark Matter &amp; Dust</i>	March 6, 2012
University of California, San Diego, CA <i>Galaxy Evolution in 3D: Mass, Dissipation, &amp; Truncation</i>	October 26, 2011
University of Toronto, Toronto, Canada <i>Galaxy Evolution in 3D: Mass, Dissipation, &amp; Truncation</i>	February 25, 2011
Princeton University, Princeton, NJ <i>Gleaming Through the Dark: Passive Galaxies as Probes of Dark Matter &amp; Dust</i>	November 10, 2010
Max Planck Institute for Extraterrestrial Physics, Max Planck Institute for Astrophysics, European Southern Observatory, Garching, Germany <i>Galaxy Evolution in 3D: Mass, Dissipation, &amp; Truncation</i>	October 21, 2010

## Colloquia and Invited Talks (continued)

---

Conf: Cosmic CoMotion, Brisbane, Australia <i>A Tighter Fundamental Plane Relation?</i>	September 28, 2010
University of Arizona, Tucson, AZ <i>Beyond Mass: What Determines the Star Formation Histories of Massive Galaxies?</i>	April 1, 2010
University of Texas, Austin, TX <i>Beyond Mass: What Determines the Star Formation Histories of Massive Galaxies?</i>	March 30, 2010
Conf: The Gaseous Evolution of Galaxies, Ringberg Castle, Germany <i>Beyond Mass: Linking Galaxy Star Formation Histories with the Central Dark Matter Fractions</i>	November 16, 2009
Max Planck Institute for Astronomy, Heidelberg, Germany <i>Beyond Mass: Linking Galaxy Star Formation Histories with the Central Dark Matter Fractions</i>	November 9, 2009
Institute for Astronomy, Manoa, HI <i>Beyond Mass: What Determines the Star Formation Histories of Massive Galaxies?</i>	September 9, 2009
University of California, Irvine, CA <i>Star Formation Histories and Structural Evolution of Early Type Galaxies</i>	March 2, 2009
Lawrence Berkeley National Lab, Berkeley, CA <i>Star Formation Histories and Structural Evolution of Early Type Galaxies</i>	December 9, 2008
California Institute of Technology, Pasadena, CA <i>Star Formation Histories and Structural Evolution of Early Type Galaxies</i>	November 3, 2008
Princeton University, Princeton, NJ <i>Star Formation Histories and Structural Evolution of Early Type Galaxies</i>	October 29, 2008
Oxford University, Oxford, U.K. <i>Star Formation Histories and Structural Evolution of Early Type Galaxies</i>	October 23, 2008
Harvard University, Cambridge, MA <i>Star Formation Histories and Structural Evolution of Early Type Galaxies</i>	October 9, 2008
National Optical Astronomy Observatory, Tucson, AZ <i>Star Formation Histories and Structural Evolution of Early Type Galaxies</i>	October 3, 2008
Conf: Galaxies in Real Life and Simulations, Leiden, Netherlands <i>Dissecting the Red Sequence: Star Formation Histories and Mass to Light Ratios</i>	September 17, 2008
Carnegie Observatories, Pasadena, CA <i>Star Formation Histories and Structural Evolution of Early Type Galaxies</i>	September 26, 2008
Max Planck Institute for Astrophysics, Garching, Germany <i>Star Formation Histories and Structural Evolution of Early Type Galaxies</i>	September 9, 2008
Institute of Astronomy, Cambridge, U.K. <i>Star Formation Histories and Structural Evolution of Early Type Galaxies</i>	July 16, 2008
University of Wisconsin, Madison, WI <i>Star Formation Histories and Structural Evolution of Early Type Galaxies</i>	May 27, 2008
Gemini Observatory, Hilo, HI <i>Stellar Populations in Red Galaxies with Ionized Gas</i>	November 13, 2007
Institute of Astronomy, Cambridge, U.K. <i>Stellar Populations in Red Galaxies with Ionized Gas</i>	August 1, 2007
University of Hertfordshire, Hatfield, U.K. <i>LINER-like Emission in Red Sequence Galaxies</i>	July 30, 2007
National Radio Astronomy Observatory, Charlottesville, VA <i>Ages and Abundances of Red Sequence Galaxies with LINER-like Emission</i>	April 4, 2006

## Publication List

Genevieve J. Graves

### First Author Refereed Journal Articles

---

- (7) “Dissecting the Red Sequence — IV. The Role of Truncation in the Two-dimensional Family of Early-type Galaxy Star Formation Histories.” **G. J. Graves**, S. M. Faber, & R. P. Schiavon. 2010, ApJ, 721, 278
- (6) “Dissecting the Red Sequence — III. Mass-to-Light Variations in Three-dimensional Fundamental Plane Space.” **G. J. Graves** & S. M. Faber. 2010, ApJ, 717, 803
- (5) “Dissecting the Red Sequence — II. Star Formation Histories of Quiescent Galaxies Throughout the Fundamental Plane.” **G. J. Graves**, S. M. Faber, & R. P. Schiavon. 2009, ApJ, 698, 1590
- (4) “Dissecting the Red Sequence — I. Star Formation Histories of Quiescent Galaxies: The Color-Magnitude vs. the Color-Sigma Relation.” **G. J. Graves**, S. M. Faber, & R. P. Schiavon. 2009, ApJ, 693, 486
- (3) “Measuring Ages and Abundances of Unresolved Stellar Populations: Fe, Mg, C, N, and Ca.” **G. J. Graves** & R. P. Schiavon. 2008, ApJS, 177, 446
- (2) “Ages and Abundances of Red Sequence Galaxies as a Function of LINER Emission-line Strength.” **G. J. Graves**, S. M. Faber, R. P. Schiavon, & R. Yan. 2007, ApJ, 671, 243
- (1) “Limits from the Hubble Space Telescope on a Point Source in SN 1987A.” **G. J. M. Graves**, P. M. Challis, R. A. Chevalier, A. Crotts, A. V. Filippenko, C. Fransson, P. Garnavich, R. P. Kirshner, W. Li, P. Lundqvist, R. McCray, N. Panagia, M. M. Phillips, C. J. S. Pun, B. P. Schmidt, G. Sonneborn, N. B. Suntzeff, L. Wang, & J. C. Wheeler. 2005, ApJ, 629, 944

### Other Refereed Journal Articles

---

- (10) “Star Clusters in M31. IV. A Comparative Analysis of Absorption Line Indices in Old M31 and Milky Way Clusters” R. P. Schiavon, N. Caldwell, H. Morrison, P. Harding, S. Courteau, L. A. MacArthur, & **G. J. Graves**. 2012, AJ, 143, 14
- (9) “Magnificent Magnification: Exploiting the Other Half of the Lensing Signal.” E. M. Huff & **G. J. Graves**. Submitted to ApJL. arXiv:1111.1070
- (8) “Cluster Lensing And Supernova survey with Hubble (CLASH): An Overview” M. Postman, D. Coe, N. Benitez, L. Bradley, T. Broadhurst, M. Donahue, H. Ford, O. Gaur, **G. Graves**, S. Jouvel, A. Koekemoer, D. Lemze, E. Medezinski, A. Molino, L. Moustakas, S. Ogaz, A. Riess, S. Rodney, P. Rosati, K. Umetsu, W. Zheng, A. Zitrin, & 21 coauthors. Submitted to ApJS. arXiv:1106.3328
- (7) “Automated Morphological Classification of SDSS Red Sequence Galaxies.” J. Y. Cheng, S. M. Faber, L. Simard, **G. J. Graves**, E. D. Lopez, R. Yan, & M. C. Cooper. 2011, MNRAS, 412, 727

## Other Refereed Journal Articles (continued)

---

- (6) “A Correction to the Standard Galactic Reddening Map: Passive Galaxies as Standard Crayons.” J. E. G. Peek & **G. J. Graves**. 2010, ApJ, 719, 415
- (5) “From Galaxy Clusters to Ultra-Faint Dwarf Spheroidals: A Fundamental Curve Connecting Dispersion-supported Galaxies to their Dark Matter Halos.” E. J. Tollerud, J. S. Bullock, **G. J. Graves**, & J. Wolf. 2011, ApJ, 726, 108
- (4) “Stellar Mass Loss, Rotation and the Chemical Enrichment of Early-type Galaxies.” A. Pipino, C. Chiappini, **G. J. Graves**, & F. Matteucci. 2009, MNRAS, 396, 1151
- (3) “Optical Spectroscopy of Type Ia Supernovae.” T. Matheson, R. P. Kirshner, P. Challis, S. Jha, P. M. Garnavich, P. Berlind, M. L. Calkins, S. Blondin, Z. Balog, A. E. Bragg, N. Caldwell, K. D. Concannon, E. E. Falco, **G. J. M. Graves**, J. P. Huchra, J. Kuraszewicz, J. A. Mader, A. Mahdavi, M. Phelps, K. Rines, I. Song, & B. J. Wilkes. 2008, AJ, 135, 1598.
- (2) “The DEEP2 Galaxy Redshift Survey: Mean Ages and Metallicities of Red Field Galaxies at  $z = 0.9$  from Stacked Keck DEIMOS Spectra.” R. P. Schiavon, S. M. Faber, N. Konidaris, **G. Graves**, C. N. A. Willmer, B. J. Weiner, A. J. Coil, M. C. Cooper, M. Davis, J. Harker, D. C. Koo, J. A. Newman, & R. Yan. 2006, ApJL, 651, 93
- (1) “UBVRI Light Curves of 44 Type Ia Supernovae.” S. Jha, R. P. Kirshner, P. Challis, P. M. Garnavich, T. Matheson, A. M. Soderberg, **G. J. M. Graves**, M. Hicken, and 76 coauthors. 2006, AJ, 131, 527

## Selected Conference Proceedings and White Papers

---

- (4) “The Buildup of Early-Type Galaxies: Measuring the Formation and Assembly of Stellar Mass Since  $z \sim 2.5$ .” B. Holden, G. Illingworth, **G. J. Graves**, M. Kriek, G. Novak, P. van Dokkum, A. van der Wel, & J. Woo. Astro2010, 132
- (3) “Teaching Astronomy with an Inquiry Activity on Stellar Populations.” M. Rafelski, M. Foley, **G. J. Graves**, K. A. Kretke, E. Mills, M. Nassir, & S. Patel. 2010, ASPC, 436, 108
- (2) “Stellar Populations and Mass-to-Light Ratios Throughout the Fundamental Plane.” **G. J. Graves**. 2008, in the proceedings of *Galaxy Evolution: Emerging Insights and Future Challenges*. 2009, ASPC, 419, 96
- (1) “LINER-like Emission in Red Galaxies: Evolutionary Phase or Recurring Phenomenon?” **G. J. Graves**. 2007, in the proceedings of IAUS Symposium 245, *Formation and Evolution of Galaxy Bulges*. 2008, IAUS, 245, 181