

# EUGENE CHIANG

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## Education

2000	CALIFORNIA INSTITUTE OF TECHNOLOGY Ph.D. Astronomy	Pasadena, CA
1995	MASSACHUSETTS INSTITUTE OF TECHNOLOGY S.B. Physics	Cambridge, MA

## Awards

2014	Berkeley's Distinguished Teaching Award (highest award for teaching on campus)
2013	Miller Research Professor
2012	NOVA Lecturer for the Netherlands Research School in Astronomy
2010	AAAS Newcomb Cleveland Prize for outstanding paper in <i>Science</i>
2004	Alfred P. Sloan Research Fellow
2000	Institute for Advanced Study Long-term Member
2000	Hubble Fellow
1999	Caltech Lewis A. Kingsley Foundation Fellow
1995	National Science Foundation (NSF) Graduate Research Fellow
1995	MIT Orloff Prize for outstanding senior thesis
1995	Alan H. Barrett Prize for astrophysics at MIT

## Appointments

11/2015–present	UC BERKELEY ASTRONOMY Chair	Berkeley, CA
2010–present	UC BERKELEY ASTRONOMY / EARTH AND PLANETARY SCIENCE Professor	Berkeley, CA
2011–2015	BERKELEY CENTER FOR INTEGRATIVE PLANETARY SCIENCE (CIPS) Director	Berkeley, CA
2005–2010	UC BERKELEY ASTRONOMY / EARTH AND PLANETARY SCIENCE Associate Professor	Berkeley, CA
2001–2005	UC BERKELEY ASTRONOMY / EARTH AND PLANETARY SCIENCE Assistant Professor	Berkeley, CA
2000–2001	INSTITUTE FOR ADVANCED STUDY (IAS) Hubble Postdoctoral Fellow / Long-term 5-year Member	Princeton, NJ
1995–2000	CALTECH THEORETICAL ASTROPHYSICS Graduate Research Assistant	Pasadena, CA
1994–1995	MIT HAYSTACK RADIO OBSERVATORY NSF Undergraduate Research Assistant	Westford, MA
1992–1995	MIT CENTER FOR SPACE RESEARCH Undergraduate Research Assistant	Cambridge, MA

## Teaching Experience

2011 ISIMA SUMMER SCHOOL LECTURER AND RESEARCH SUPERVISOR Beijing, China

- Delivered 6-hour lecture series on planet formation to students, postdocs, and faculty from China, France, Germany, Britain, Japan, and the US, as part of the International Summer Institute for Modeling in Astrophysics (ISIMA, funded by NSF, hosted by the Kavli Institute for Astronomy and Astrophysics at Beijing University).
- Supervised five independent research projects for six graduate students from France and China. Projects resulted in two refereed publications.

2001–present BERKELEY ASTROPHYSICS COURSES (12 DIFFERENT CLASSES IN 16 YEARS) Berkeley, CA

- INTRODUCTION TO ASTROPHYSICS II (UNDERGRADUATE)  
[astro.berkeley.edu/~echiang/Astro7B/7B.html](http://astro.berkeley.edu/~echiang/Astro7B/7B.html)  
Gateway to the double major in Astronomy and Physics. Interacting binaries, accretion disks, black holes, gravitational lensing, galaxies, cosmology. Tour of experimental CMB labs.
- INTRODUCTION TO ASTROPHYSICS I (UNDERGRADUATE)  
[astro.berkeley.edu/~echiang/Astro7A/7A.html](http://astro.berkeley.edu/~echiang/Astro7A/7A.html)  
Gateway to the double major in Astronomy and Physics. Instrumentation, radiation, stellar structure, compact objects. Field trip to Lick Observatory.
- PLANETARY ASTROPHYSICS (UNDERGRADUATE)  
[astro.berkeley.edu/~echiang/planet/planet.html](http://astro.berkeley.edu/~echiang/planet/planet.html)  
Upper division course on planetary physics, treating radiometric dating, planetary atmospheres, planetary interiors, the asteroid and Kuiper belts, brown dwarfs, extrasolar planets, and planet formation. Student blackboard presentations.
- ORDER-OF-MAGNITUDE PHYSICS (GRADUATE AND ADVANCED UNDERGRADUATE)  
[astro.berkeley.edu/~echiang/oom/oom.html](http://astro.berkeley.edu/~echiang/oom/oom.html)  
The art of estimating any quantity under the sun (e.g., the cost of Obama's inaugural ball; the frequency of kettledrums; the minimum water depth for cliff diving). Attracts graduate students from Physics, Astronomy, Earth and Planetary Science, Electrical Engineering, and Applied Science and Technology.
- ASTROPHYSICAL FLUID DYNAMICS (GRADUATE AND ADVANCED UNDERGRADUATE)  
[astro.berkeley.edu/~echiang/fluid/fluid.html](http://astro.berkeley.edu/~echiang/fluid/fluid.html)  
Core graduate course on hydrodynamics and magnetohydrodynamics. A mix of order-of-magnitude and technical problems, with emphasis on developing familiarity with the literature. Oral exams.
- RADIATIVE PROCESSES IN ASTROPHYSICS (GRADUATE AND ADVANCED UNDERGRADUATE)  
[astro.berkeley.edu/~echiang/rad/rad.html](http://astro.berkeley.edu/~echiang/rad/rad.html)  
Core graduate course on how we see what we see. Continuum processes, atomic and molecular line radiation, radiative transfer algorithms. Oral exams.
- GALACTIC DYNAMICS (GRADUATE)  
[coma.berkeley.edu/courses/ay250\\_f07](http://coma.berkeley.edu/courses/ay250_f07)  
Combines lecture with round-table discussions on spiral structure, N-body algorithms, relaxation mechanisms, Schwarzschild's method, dynamical friction, galaxy formation. Students posed and answered their own questions by constructing their own wiki pages. Beta-tested Binney & Tremaine's Second Edition of *Galactic Dynamics*, communicated errata and suggestions for future editions to the authors.

- PLANETARY DYNAMICS (GRADUATE)  
[astro.berkeley.edu/~echiang/classmech/classmech.html](http://astro.berkeley.edu/~echiang/classmech/classmech.html)  
 Combines lecture with round-table discussions of papers on extrasolar planets, orbital perturbation theory, resonances, chaos, planet formation. Students present blackboard derivations every week.
- PHYSICS OF SUPER-EARTHS (GRADUATE)  
[cips.berkeley.edu/events/superearths.html](http://cips.berkeley.edu/events/superearths.html)  
 Reading seminar on formation and evolution of Earth and Earth-like planets, attracting students from Astronomy and Earth and Planetary Science. Original problem sets accompany weekly readings.
- ACCRETION DISKS (GRADUATE)  
 Reading seminar on mechanisms of angular momentum transport in astrophysical disks. Mini-lectures accompany weekly readings.
- CLASSIC PAPERS IN THEORETICAL ASTROPHYSICS (GRADUATE)  
 Reading seminar on seminal papers in theoretical astrophysics, ranging from Parker's solar wind to Press-Schechter cosmological structure formation.
- CLASSIC PAPERS IN EARTH AND PLANETARY SCIENCE (GRADUATE)  
[cips.berkeley.edu/events/previous03\\_04.html](http://cips.berkeley.edu/events/previous03_04.html)  
 Reading seminar on seminal papers in geophysics, from chaos to mantle convection.

*2001–present*

RESEARCH ADVISOR

Berkeley, CA

- POSTDOCTORAL COLLABORATORS AT BERKELEY: Yoram Lithwick (TAC Fellow, faculty at Northwestern University), Eric Ford (Miller Fellow, faculty at Penn State), Josh Eisner (Miller Fellow, faculty at University of Arizona), Xylar Asay-Davis (Los Alamos National Lab), Meredith Hughes (Miller Fellow, faculty at Wesleyan University), Margaret Pan (CIPS/TAC Fellow), Chris Ormel (Hubble Fellow; VIDI Fellow), Ji-Ming Shi (CIPS/TAC Fellow), Ruobing Dong (Hubble Fellow, Bok Fellow at Arizona), Rebekah Dawson (Miller Fellow, faculty at Penn State, 2017 AAS Annie Jump Cannon Recipient), Paul Duffell (TAC Fellow), Jing Luan (CIPS/TAC Fellow), Jeffrey Fung (NSERC/CIPS/Sagan Fellow)
- GRADUATE STUDENTS AT BERKELEY: David Khatami (Astronomy), Eve Lee (Astronomy, Burke Fellow in Theoretical Astrophysics at Caltech), Tushar Mittal (EPS), Daniel Perez-Becker (Physics), Edwin Kite (EPS, Assistant Professor at University of Chicago), Ruth Murray-Clay (Astronomy, Associate Professor at UC Santa Cruz, 2015 AAS Warner Prize Recipient), Linda Strubbe (Astronomy), Holly Maness (Astronomy).
- GRADUATE STUDENTS FROM ISIMA: Jacques Masson (Ecole Normale Supérieure, France), Pascal Tremblin (CEA, Paris-Saclay, France), Peng Jiang (USTC, China), Sun Zhao (Purple Mountain Observatory, China), Zhi Jia (Beijing University, China), Wei Hao (Beijing University, China)
- GRADUATE STUDENT FROM KYOTO UNIVERSITY INTERNATIONAL EXCHANGE PROGRAM: Takaya Tamura (Kyoto University, Japan)
- UNDERGRADUATES AT BERKELEY: Ben Vinson (Physics), Skylar Kerzer (Physics, Astronomy), Hyo Min Choi (Mathematics), Amy Jordan (Astronomy), Chris Culter (Physics, honors thesis), Jessica Lovering (Astronomy)
- UNDERGRADUATE AT CALTECH: Ryan Moo Kwang Joung (Physics, honors thesis)

*2008–2015*

HEAD GRADUATE ADVISOR FOR BERKELEY ASTRONOMY

Berkeley, CA

- General-purpose advisor for over 40 graduate students in Astronomy. Enforce deadlines for preliminary and qualifying exams. Mediate student-faculty conflicts. Track progress of all students and intervene when necessary.
- Author of 58-page manual for curricula and advising for Departmental Self-Study in 2008.

1996–1999

CALTECH TEACHING ASSISTANT

Pasadena, CA

- INTRODUCTORY ASTRONOMY (UNDERGRADUATE)
- ORDER-OF-MAGNITUDE PHYSICS (UNDERGRADUATE)
- ASTROPHYSICAL RADIATIVE PROCESSES (GRADUATE)
- PLANETARY DYNAMICS (GRADUATE)

1993

MIT WRITING CENTER TUTOR

Cambridge, MA

- Coached students on how to improve their prose. Critiqued and corrected scientific papers, essays, resumes and cover letters.

### Committees and Professional Service

1. BERKELEY ASTRONOMY DEPARTMENT CHAIR (11/2015–present)
2. BERKELEY ASTRONOMY CLIMATE ADVISOR (11/2015–present; one of seven Astronomy advisors who promote equity and inclusion and provide support for survivors of harassment)
3. DIRECTOR, BERKELEY CENTER FOR INTEGRATIVE PLANETARY SCIENCE (CIPS) (2011–2015; organizer of weekly CIPS Planet and Star Formation Seminar; led 2013 review which restored annual budget)
4. HEAD GRADUATE ADVISOR, BERKELEY ASTRONOMY (2008–2015)
5. SAGAN FELLOWSHIP SELECTION COMMITTEE (panelist to select national prize postdoctoral fellows in exoplanet science)
6. HUBBLE FELLOWSHIP SELECTION COMMITTEE (panelist to select national prize postdoctoral fellows across all fields of astrophysics)
7. INVITED SCIENCE FRONTIER PANELIST FOR STAR AND PLANET FORMATION, NATIONAL ACADEMY OF SCIENCES ASTRO2010 DECADAL SURVEY (2010)
8. SCIENTIFIC ORGANIZING COMMITTEE FOR BAY AREA CONSORTIUM FOR EXOPLANET SCIENCE (BACES) (2012–present)
9. CHAIR OF GRADUATE ADMISSIONS, BERKELEY ASTRONOMY (2010–2014)
10. ASTRONOMY LIAISON AND CO-I FOR BERKELEY SCIENCE DIVERSITY PROGRAMS (2010–present, PI Colette Patt)
11. BERKELEY COMMITTEE ON COURSES OF INSTRUCTION AND ACADEMIC PROGRAM (COCI; 2011–2015)
12. BERKELEY COMMITTEE ON UNDERGRADUATE SCHOLARSHIPS, HONORS, AND FINANCIAL AID (CUSHFA; 2011–present)
13. POSTDOCTORAL FELLOW SELECTION, BERKELEY ASTRONOMY (2001–2014; CIPS, Miller, TAC)
14. OPEN FACULTY SEARCH COMMITTEE, BERKELEY ASTRONOMY (2010)
15. CHAIR, EDUCATION COMPONENT OF BERKELEY ASTRONOMY SELF-STUDY (2008)
16. FACULTY SEARCH COMMITTEE, BERKELEY CIPS/EPS (2006, 2007)
17. REFEREE FOR NSF AND NASA GRANT PROPOSALS (NSF Planetary Astronomy, NASA Origins, NASA Planetary Geology and Geophysics, and NASA Outer Planets Research)
18. REFEREE FOR GRANT PROPOSALS FOR US-ISRAELI BINATIONAL SCIENCE FOUNDATION, NETHERLANDS ORGANIZATION FOR SCIENTIFIC RESEARCH (NWO), AND HONG KONG RESEARCH GRANTS COUNCIL
19. REFEREE FOR *Nature*, *Science*, *Astrophysical Journal*, *Astronomy & Astrophysics*, *MNRAS*

**Refereed Publications (89 accepted; 2 submitted; h-index: 37)**

1. "ON THE LI AND BE TESTS FOR BROWN DWARFS," Nelson, L. A., Rappaport, S., & Chiang, E. *Astrophys. J.*, 413, 364 (1993)
2. "TIME-DOMAIN HOLOGRAPHIC IMAGE STORAGE," Shen, X. A., Chiang, E., & Kachru, R. *Optics Letters*, 19, 1246 (1994)
3. "IONIZATION NEBULAE SURROUNDING SUPERSOFT X-RAY SOURCES," Rappaport, S., Chiang, E., Kallman, T., & Malina, R. *Astrophys. J.*, 431, 237 (1994)
4. "A  $\lambda$ 3.6 CM RADIO SURVEY OF LOW-MASS WEAK T TAURI STARS IN TAURUS-AURIGA," Chiang, E., Phillips, R., & Lonsdale, C. *Astron. J.*, 111, 355 (1996)
5. "TIME-DEPENDENT CALCULATIONS OF IONIZATION NEBULAE SURROUNDING SUPERSOFT X-RAY SOURCES," Chiang, E., & Rappaport, S. *Astrophys. J.*, 469, 255 (1996)
6. "SPECTRAL ENERGY DISTRIBUTIONS OF T TAURI STARS WITH PASSIVE CIRCUMSTELLAR DISKS," Chiang, E. I., & Goldreich, P. *Astrophys. J.*, 490, 368 (1997)
7. "KECK PENCIL-BEAM SURVEY FOR FAINT KUIPER BELT OBJECTS," Chiang, E.I., & Brown, M. E. *Astron. J.*, 118, 1411 (1999)
8. "SPECTRAL ENERGY DISTRIBUTIONS OF PASSIVE T TAURI DISKS: INCLINATION," Chiang, E.I., & Goldreich, P. *Astrophys. J.*, 519, 279 (1999)
9. "ANGULAR MOMENTUM TRANSPORT IN PARTICLE AND FLUID DISKS," Quataert, E., & Chiang, E. I. *Astrophys. J.*, 543, 432 (2000)
10. "APSE ALIGNMENT OF NARROW ECCENTRIC PLANETARY RINGS," Chiang, E. I., & Goldreich, P. *Astrophys. J.*, 540, 1084 (2000)
11. "SPECTRAL ENERGY DISTRIBUTIONS OF PASSIVE T TAURI AND HERBIG AE DISKS: GRAIN MINERALOGY, PARAMETER DEPENDENCES, AND COMPARISON WITH OBSERVATIONS," Chiang, E. I., Joung, M. K., Creech-Eakman, M., Qi, C., Kessler, J., Blake, G., & van Dishoeck, E. F. *Astrophys. J.*, 577, 1077 (2001)
12. "APSIDAL ALIGNMENT IN UPSILON ANDROMEDAE," Chiang, E. I., Tabachnik, S., & Tremaine, S. *Astron. J.*, 122, 1607 (2001)
13. "INFRARED VIEWS OF THE TW HYA DISK," Weinberger, A. J., Becklin, E. E., Schneider, G., Chiang, E. I., Lowrance, P. J., Silverstone, M., Zuckerman, B., Hines, D., & Smith, B. A. *Astrophys. J.*, 566, 409 (2002)
14. "ISO LWS SPECTRA OF T TAURI AND HERBIG AEBE STARS," Creech-Eakman, M.J., Chiang, E.I., Joung, R.M.K., Blake, G.A., & van Dishoeck, E.F. *Astron. & Astrophys.*, 385, 546 (2002)
15. "EXCITATION OF ORBITAL ECCENTRICITIES OF EXTRASOLAR PLANETS BY REPEATED RESONANCE CROSSINGS," Chiang, E. I., Fischer, D., & Thommes, E. *Astrophys. J. Letters*, 564, L105 (2002)
16. "ECCENTRICITY EXCITATION AND APSIDAL RESONANCE CAPTURE IN THE PLANETARY SYSTEM UPSILON ANDROMEDAE," Chiang, E. I., & Murray, N. *Astrophys. J.*, 576, 473 (2002)
17. "A COLLISIONAL FAMILY IN THE CLASSICAL KUIPER BELT," Chiang, E. I. *Astrophys. J. Letters*, 573, L65 (2002)
18. "ON THE PLUTINOS AND TWOTINOS OF THE KUIPER BELT," Chiang, E. I., & Jordan, A. B. *Astron. J.*, 124, 3430 (2002)
19. "EXCITATION OF ORBITAL ECCENTRICITIES BY REPEATED RESONANCE CROSSINGS: REQUIREMENTS," Chiang, E. I. *Astrophys. J.*, 584, 465 (2003)
20. "RESONANCE OCCUPATION IN THE KUIPER BELT: CASE EXAMPLES OF THE 5:2 AND TROJAN RESONANCES," Chiang, E. I., Jordan, A. B., Millis, R. L., Buie, M. W., Wasserman, L. H., Elliot, J. L., Kern, S. D., Trilling, D. E., Meech, K. M., & Wagner, R. M. *Astron. J.*, 126, 430 (2003)

21. "RESONANT AND SECULAR FAMILIES OF THE KUIPER BELT," Chiang, E. I., Lovering, J.L., Millis, R. L., Buie, M. W., Wasserman, L. H., & Meech, K. J. *Earth, Moon, & Planets*, First Decadal Review of the Edgeworth-Kuiper Belt special issue, 92, 49 (2003)
22. "PROCEDURES, RESOURCES AND SELECTED RESULTS OF THE DEEP ECLIPTIC SURVEY," Buie, M.W., Millis, R.L., Wasserman, L.H., Elliot, J.L., Kern, S.D., Clancy, K.B., Chiang, E.I., Jordan, A.B., Meech, K.J., Wagner, R.M., & Trilling, D.E. *Earth, Moon, & Planets*, 92, 113 (2003)
23. "THE DYNAMIC NEPTUNIAN RING ARCS," de Pater, I., Gibbard, S., Chiang, E. I., Hammel, H., Macintosh, B., Marchis, F., Martin, S., Roe, H. G., & Showalter, M. *Icarus*, 174, 263 (2005)
24. "THREE-DIMENSIONAL DYNAMICS OF NARROW PLANETARY RINGS," Chiang, E. I. & Culter, C. J. *Astrophys. J.*, 599, 675 (2004)
25. "PARTICLE PILE-UPS AND PLANETESIMAL FORMATION," Youdin, A. N. & Chiang, E. I. *Astrophys. J.*, 601, 1109 (2004)
26. "THE CIRCUMBINARY RING OF KH 15D," Chiang, E. I. & Murray-Clay, R. A. *Astrophys. J.*, 607, 913 (2004)
27. "A SIGNATURE OF PLANETARY MIGRATION: THE ORIGIN OF ASYMMETRIC CAPTURE IN THE 2:1 RESONANCE," Murray-Clay, R. A. & Chiang, E. I. *Astrophys. J.*, 619, 623 (2005)
28. "THE DEEP ECLIPTIC SURVEY: A SEARCH FOR KUIPER BELT OBJECTS AND CENTAURS. II. DYNAMICAL CLASSIFICATION, THE KUIPER-BELT PLANE, AND THE CORE POPULATION," Elliot, J.L., Kern, S.D., Clancy, K.B., Gulbis, A.A.S., Millis, R.L., Buie, M.W., Wasserman, L.H., Chiang, E. I., Jordan, A.B., Trilling, D.E., & Meech, K.J. *Astron. J.*, 129, 1117 (2005)
29. "NEPTUNE TROJANS AS A TESTBED FOR PLANET FORMATION," Chiang, E. I., & Lithwick, Y. *Astrophys. J.*, 628, 520 (2005)
30. "ON THE LOCATION OF THE SNOW-LINE IN PROTOPLANETARY DISKS," Lecar, M., Podolak, M., Sasselov, D., & Chiang, E. *Astrophys. J.*, 640, 1115 (2006)
31. "SPATIALLY RESOLVING THE INNER DISK OF TW HYDRAE," Eisner, J. A., Chiang, E. I., & Hillenbrand, L. A. *Astrophys. J. Letters*, 637, 133 (2006)
32. "DUST DYNAMICS, SURFACE BRIGHTNESS PROFILES, AND THERMAL SPECTRA OF DEBRIS DISKS: THE CASE OF AU MICROSCOPII," Strubbe, L. E., & Chiang, E. I. *Astrophys. J.*, 648, 652 (2006)
33. "BROWNIAN MOTION IN PLANETARY MIGRATION," Murray-Clay, R. A., & Chiang, E. I. *Astrophys. J.*, 651, 1194 (2006)
34. "A BRIEF HISTORY OF TRANS-NEPTUNIAN SPACE," Chiang, E. I., Lithwick, Y., Murray-Clay, R., Buie, M., Grundy, W., & Holman, M. Refereed review chapter in *Protostars and Planets V*, eds. B. Reipurth, D. Jewitt, & K. Keil, University of Arizona Press, 895 (2007)
35. "COLLISIONAL PARTICLE DISKS," Lithwick, Y., & Chiang, E. *Astrophys. J.*, 656, 524 (2007)
36. "SPECTRALLY DISPERSED K-BAND INTERFEROMETRIC OBSERVATIONS OF HERBIG AE/BE SOURCES: INNER DISK TEMPERATURE PROFILES," Eisner, J. A., Chiang, E. I., Lane, B. F., & Akeson, R. L. *Astrophys. J.*, 657, 347 (2007)
37. "BINARIES IN THE KUIPER BELT," Noll, K. S., Grundy, W. M., Chiang, E. I., Margot, J.-L., & Kern, S. D. Refereed review chapter in *The Kuiper Belt*, University of Arizona Press (2007)
38. "THE FORMATION OF ICE GIANTS IN A PACKED OLIGARCHY: INSTABILITY AND AFTERMATH," Ford, E. B., & Chiang, E. I. *Astrophys. J.*, 661, 602 (2007)
39. "THE ORIGIN OF THE YOUNG STARS IN THE NUCLEUS OF M31," Chang, P., Murray-Clay, R., Chiang, E., & Quataert, E. *Astrophys. J.*, 668, 236 (2007)
40. "INSIDE-OUT EVACUATION OF TRANSITIONAL PROTOPLANETARY DISKS BY THE MAGNETO-ROTATIONAL INSTABILITY," Chiang, E. I., & Murray-Clay, R. A. *Nature Physics*, 3, 604 (2007)

41. "VERTICAL SHEARING INSTABILITIES IN RADIALLY SHEARING DISKS: THE DUSTIEST LAYERS OF THE PROTOPLANETARY NEBULA," Chiang, E. I. *Astrophys. J.*, 675, 1549 (2008)
42. "THE WARPED PLANE OF THE CLASSICAL KUIPER BELT," Chiang, E. I., & Choi, H. *Astron. J.*, 136, 350 (2008)
43. "OPTICAL IMAGES OF AN EXOSOLAR PLANET 25 LIGHT-YEARS FROM EARTH," Kalas, P., Graham, J. R., Chiang, E. I., Fitzgerald, M. P., Clampin, M., Kite, E. S., Stapelfeldt, K., Marois, C., & Krist, J. *Science*, 302, 1345 (2008)
44. "ATMOSPHERIC ESCAPE FROM HOT JUPITERS," Murray-Clay, R. A., Chiang, E. I., & Murray, N. *Astrophys. J.*, 693, 23 (2009)
45. "HIGH ALBEDOS OF LOW INCLINATION CLASSICAL KUIPER BELT OBJECTS," Brucker, M. J., Grundy, W. M., Stansberry, J. A., Spencer, J. R., Sheppard, S. S., Chiang, E. I., & Buie, M. W. *Icarus*, 201, 284 (2009)
46. "FOMALHAUT'S DEBRIS DISK AND PLANET: CONSTRAINING THE MASS OF FOMALHAUT B FROM DISK MORPHOLOGY," Chiang, E., Kite, E., Kalas, P., Graham, J. R., & Clampin, M. *Astrophys. J.*, 693, 734 (2009)
47. "HUBBLE SPACE TELESCOPE IMAGING OF THE ERODING DEBRIS DISK HD 61005," Maness, H., Kalas, P., Peek, K. M. G., Chiang, E. I., et al. *Astrophys. J.*, 707, 1098 (2009)
48. "FORMING PLANETESIMALS IN SOLAR AND EXTRASOLAR NEBULAE," Chiang, E., & Youdin, A. *Annual Reviews of Earth and Planetary Science*, 38, 493 (2010)
49. "FORMING PLANETESIMALS BY GRAVITATIONAL INSTABILITY. I. THE ROLE OF THE RICHARDSON NUMBER IN TRIGGERING THE KELVIN-HELMHOLTZ INSTABILITY," Lee, A. T., Chiang, E., Asay-Davis, X., & Barranco, J. *Astrophys. J.*, 718, 1367 (2010)
50. "FORMING PLANETESIMALS BY GRAVITATIONAL INSTABILITY. II. HOW DUST SETTLES TO ITS MARGINALLY STABLE STATE," Lee, A. T., Chiang, E., Asay-Davis, X., & Barranco, J. *Astrophys. J.*, 725, 1938 (2010)
51. "THE PROPELLER AND THE FROG," Pan, M., & Chiang, E. *Astrophys. J. Letters*, 722, L178 (2010)
52. "SURFACE LAYER ACCRETION IN TRANSITIONAL AND CONVENTIONAL DISKS: FROM POLYCYCLIC AROMATIC HYDROCARBONS TO PLANETS," Perez-Becker, D., & Chiang, E. *Astrophys. J.*, 727, 2 (2011)
53. "SURFACE LAYER ACCRETION IN CONVENTIONAL AND TRANSITIONAL DISKS DRIVEN BY FAR-ULTRAVIOLET IONIZATION," Perez-Becker, D., & Chiang, E. *Astrophys. J.*, 735, 8 (2011)
54. "CARE AND FEEDING OF FROGS," Pan, M., & Chiang, E. *Astron. J.*, 143, 9 (2012)
55. "CONFIRMING THE PRIMARILY SMOOTH STRUCTURE OF THE VEGA DEBRIS DISK AT MILLIMETER WAVELENGTHS," Hughes, M., et al. *Astrophys. J.*, 750, 82 (2012)
56. "POSSIBLE DISINTEGRATING SHORT-PERIOD SUPER-MERCURY ORBITING KIC 12557548," Rappaport, S., Levine, A., Chiang, E., et al. *Astrophys. J.*, 752, 1 (2012)
57. "STOCHASTIC FLIGHTS OF PROPELLERS," Pan, M., Rein, H., Chiang, E., & Evans, S.N. *MNRAS*, 427, 2788 (2012)
58. "COLLIDING PLANETARY AND STELLAR WINDS: CHARGE EXCHANGE AND TRANSIT SPECTROSCOPY IN NEUTRAL HYDROGEN," Tremblin, P., & Chiang, E. *MNRAS*, 428, 2565 (2013)
59. "MILLIMETER EMISSION STRUCTURE IN THE FIRST ALMA IMAGE OF THE AU MIC DEBRIS DISK," MacGregor, M.A., et al. *Astrophys. J. Letters*, 762, L21 (2013)
60. "FROM DUST TO PLANETESIMALS: CRITERIA FOR GRAVITATIONAL INSTABILITY OF SMALL PARTICLES IN GAS," Shi, J.-M., & Chiang, E. *Astrophys. J.*, 764, 20 (2013)
61. "THE MINIMUM-MASS EXTRASOLAR NEBULA: IN-SITU FORMATION OF CLOSE-IN SUPER-EARTHS," Chiang, E., & Laughlin, G. *MNRAS*, 431, 3444-3455 (2013)
62. "CATASTROPHIC EVAPORATION OF ROCKY PLANETS," Perez-Becker, D., & Chiang, E. *MNRAS*, 433, 2294-2309 (2013)

63. "HOW EMPTY ARE DISK GAPS OPENED BY GIANT PLANETS," Fung, J., Shi, J.-M., & Chiang, E. *ApJ*, 782, 88 (2014)
64. "FAST RADIAL FLOWS IN TRANSITION DISK HOLES," Rosenfeld, K.A., Chiang, E., & Andrews, S.M. *ApJ*, 782, 62 (2014)
65. "MULTIWAVELENGTH OBSERVATIONS OF THE PUTATIVE DISINTEGRATING SUB-MERCURY KIC 12557548B," Croll, B., et al. *ApJ*, 786, 100 (2014)
66. "GRAVITO-TURBULENT DISKS IN 3D: TURBULENT VELOCITIES VS. DEPTH," Shi, J.-M. & Chiang, E. *ApJ*, 789, 34 (2014)
67. "A CLASS OF WARM JUPITERS WITH MUTUALLY INCLINED, APSIDALLY ALIGNED CLOSE FRIENDS," Dawson, Rebekah I. & Chiang, Eugene *Science*, 346, 212 (2014)
68. "MAKE SUPER-EARTHS, NOT JUPITERS: ACCRETING NEBULAR GAS ONTO SOLID CORES AT 0.1 AU AND BEYOND," Lee, Eve J., Chiang, E., & Ormel, Chris W. *ApJ*, 797, 95 (2014)
69. "FAST MODES AND DUSTY HORSESHOES IN TRANSITIONAL DISKS," Mittal, T. & Chiang, E. *ApJL*, 798, L25 (2015)
70. "A METALLICITY RECIPE FOR ROCKY PLANETS," Dawson, R.I., Chiang, E., & Lee, E.J. *MNRAS*, 453, 1471 (2015)
71. "TO COOL IS TO ACCRETE: ANALYTIC SCALINGS FOR NEBULAR ACCRETION OF PLANETARY ATMOSPHERES," Lee, Eve J., & Chiang, Eugene *ApJ*, 811, 41 (2015)
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78. "RESOLVED MILLIMETER-WAVELENGTH OBSERVATIONS OF DEBRIS DISKS AROUND SOLAR-TYPE STARS," Steele, A., et al. *ApJ*, 816, 27 (2016)
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81. "DUST DYNAMICS IN 2D GRAVITO-TURBULENT DISKS," Shi, J.-M., Zhu, Z., Stone, J.M., & Chiang, E. *MNRAS*, 459, 982 (2016)
82. "AN M-DWARF COMPANION AND ITS INDUCED SPIRAL ARMS IN THE HD 100543 PROTOPLANETARY DISK," Dong, R., et al. *ApJL*, 816, L12 (2016)
83. "HOW SPIRALS AND GAPS DRIVEN BY COMPANIONS IN PROTOPLANETARY DISKS APPEAR IN SCATTERED LIGHT AT ARBITRARY VIEWING ANGLES," Dong, R., Fung, J., & Chiang, E. *ApJL*, 826, 75 (2016)
84. "TWO TRANSITING LOW-DENSITY SUB-SATURNS FROM K2," Petigura, E.A., et al. *ApJ*, 818, 36 (2016)

85. "SIGNATURES OF GRAVITATIONAL INSTABILITY IN RESOLVED IMAGES OF PROTOSTELLAR DISKS," Dong, R., et al. *ApJ*, 823, 141 (2016)
86. "A PRIMER ON UNIFYING DEBRIS DISK MORPHOLOGIES," Lee, Eve J. & Chiang, Eugene *ApJ*, 827, 125 (2016)
87. "BRINGING "THE MOTH" TO LIGHT: A PLANET-SCULPTING SCENARIO FOR THE HD 61005 DISK," Esposito, T.M., et al. *AJ*, 152, 85 (2016)
88. "GAP OPENING IN 3D: SINGLE-PLANET GAPS," Fung, Jeffrey & Chiang, Eugene *ApJ*, 832, 105 (2016)
89. "THE SIZES AND DEPLETIONS OF THE DUST AND GAS CAVITIES IN THE TRANSITIONAL DISK J160421.7-213028," Dong, R., et al. *ApJ*, in press (2017, arXiv:1701.05189)
90. "SAVE THE PLANET, FEED THE STAR: HOW SUPER-EARTHS SURVIVE MIGRATION AND DRIVE DISK ACCRETION," Fung, Jeffrey & Chiang, Eugene *ApJ*, submitted (2017, arXiv:1701.08161)
91. "MAGNETOSPHERIC TRUNCATION, TIDAL INSPIRAL, AND THE CREATION OF SHORT-PERIOD AND ULTRA-SHORT-PERIOD PLANETS," Lee, Eve J. & Chiang, Eugene *ApJ*, submitted (2017, arXiv:1702.08461)

### **Minor Planet Electronic Circulars / International Astronomical Union Circulars**

1. Co-author of over 100 MPECs announcing discoveries of Kuiper Belt Objects
2. Chiang, E. IAU Circular 8044, 3 (2003): Announcement of discovery of first Neptunian Trojan 2001 QR<sub>322</sub>

## Selected Presentations (average 4 invited colloquia/seminars per year)

1. "CLOSE-IN PLANETS"

Caltech Theoretical Astrophysics (TAPIR) seminar (2015), University of Toronto at Scarborough 'Planet Day' (2015), NOVA Lecturer for the Netherlands Research School for Astronomy (2012).

2. "PROTOPLANETARY DISKS"

Caltech Planetary Science seminar (2015).

3. "PLANETESIMAL FORMATION AND DISK ACCRETION"

Cornell (2009), Harvard Institute for Theory and Computation (2009), UCLA (2010), University of Toronto (2011).

4. "PLANET FORMATION: OBSERVATIONS AND THEORY"

Invited 6-hour lecture series for the ISIMA Summer School on "Star and Planet Formation," at the Kavli Institute for Astronomy and Astrophysics at Beijing University (2011).

5. "RESONANT RINGS: THE KUIPER BELT AND BEYOND"

Invited colloquium at 15+ institutions, including MIT (2006), UC Berkeley (EPS Distinguished Speaker, 2006), American Museum of Natural History (2006), Caltech (2005), Institute for Advanced Study (2004), Ohio State University (2004).

6. "PROTOPLANETARY DISKS: FROM T TAURI STARS TO DEBRIS SYSTEMS"

Invited 5-hour lecture series for the 24th Jerusalem Winter School on "Lives of Low-Mass Stars and Their Planets," at Hebrew University in Israel (2006/2007).

7. "ORDER-OF-MAGNITUDE ADVENTURES IN PLANETARY SCIENCE"

Invited 3-hour lecture series for the International Planetary School in Kobe, Japan (2005).

8. "ARCHITECTURES OF EXTRA-SOLAR PLANETARY SYSTEMS"

Invited speaker and co-organizer for the Aspen Center for Physics Conference on Origin and Evolution of Planets (2005) and the Sackler Conference at Harvard on Astrophysics of Planetary Systems (2004).

## Public Outreach

### 1. ORDER-OF-MAGNITUDE ESTIMATION AND THE DEEPWATER HORIZON OIL SPILL

Estimated correctly the oil spill rate from the April 2010 British Petroleum oil rig explosion in the Gulf of Mexico. Provided source material for the Final Report of President Obama's Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. See links to news articles and a history of events at [astro.berkeley.edu/~echiang/bp/bp.html](http://astro.berkeley.edu/~echiang/bp/bp.html).

### 2. "ASHES TO ASHES, DUST TO DUST: THE BIRTH AND DEATH OF PLANETS"

Miller Institute for Basic Science (2013)

### 3. "CLOSE-IN PLANETS: FROM HOT JUPITERS TO SUPER-MOONS"

Mount Diablo Astronomical Society (2012); SETI Institute (2013)

### 4. "ACTION AND REACTION: HOW GRAVITY SHAPES PLANETARY SYSTEMS"

Berkeley COMPASS Project for undergraduates (2010), San Francisco Amateur Astronomers (2009), Berkeley Astrophysics Roundtable (for donors; 2009)

### 5. "THE TENTH PLANET AND BEYOND"

Berkeley CIPS Public Lecture (2006), Mount Tamalpais Astronomical Society (2006), Silicon Valley Astronomy Lecture Series (audience of 600+) (2004), Sonoma State "What Physicists Do" Lecture Series (2004), Mount Diablo Astronomical Society (2003), Cal Day Astronomy Department Open House (2002)

**Languages**      Conversational Mandarin Chinese

**References**      Available upon request