CURRICULUM BIO-BIBLIOGRAPHY

Yale University
January 17, 2022

Gregory P. Laughlin

Professor
Department of Astronomy

Employment

2016-	Professor of Astronomy, Yale University
2007-16	Professor of Astronomy and Astrophysics, UC Santa Cruz
2001-07	Assistant, Associate Professor of Astronomy and Astrophysics, UC Santa Cruz
1999-01	Space Scientist, Planetary Systems Branch, NASA Ames Research Center
1998-99	Postdoctoral Fellow, Dept. of Astronomy, University of California, Berkeley
1995-97	Postdoctoral Researcher, Lecturer, Dept. of Physics, University of Michigan
1994-95	JSPS/NSF Postdoctoral Fellow, National Astronomical Observatory Tokyo, Japan

Education

1994	UC Santa Cruz, Ph.D. in Astronomy and Astrophysics
1990	UC Santa Cruz, M.S. in Astronomy and Astrophysics
1988	University of Illinois, B.A. in Physics

Honors and Awards

2019	American Astronomical Society Kavli Foundation Plenary Lecturer
2005	NSF CAREER Award
1994	NSF/JSPS Postdoctoral Fellow

Books

[2] "Numerical Methods in Astrophysics: An Introduction." Peter Bodenheimer, Gregory Laughlin, Michal Rozyczka and Harold Yorke, (Taylor and Francis: London) (2006).

[1] "The Five Ages of the Universe -- Inside the Physics of Eternity." Fred Adams and Gregory Laughlin, (Free Press: New York) (hardcover 1999; softcover 2000). Also published in Danish, German, Polish, Portuguese (separate Portugal and Brazilian translations), Japanese, Finnish, Russian, Serbian, Spanish, and Swedish editions.

Refereed Conference Papers

Note: In Computer Science, Refereed Conference Papers are the Primary Mode of Publication

[5] "cISP: A Speed-of-Light Internet Service Provider", Bhattacherjee, D., Aqeel, A., Jyothi, S., Bozkurt, I., Sentosa, W., Tirmazi, M. Aguirre, A., Chandrasekhar, B., Godfrey, P. B., Laughlin, G., & Maggs, B. 19th USENIX Symposium on Networked Systems Design and Implentation (NSDI '22). Accepted.

[4] "Untangling Header Bidding Lore", Aqeel, W. and 6 co-authors, including Laughlin G. In: Sperotto A., Dainotti A., Stiller B. (eds) *Passive and Active Measurement. PAM 2020. Lecture Notes in Computer Science*, vol 12048 Springer (2020).

[3] "A Bird's Eye View of the World's Fastest Networks", Bhattacherjee, D., Aqeel, W., Laughlin, G., Maggs, B. M., & Singla, A. *IMC '20: Proceedings of the ACM Internet Measurement Conference*, pp. 521-527 (2020).

[2] "Gearing up for the 21st Century Space Race", Bhattacherjee, D. and 8 co-authors, including Laughlin, G. *HotNets 2018: Seventeenth ACM Workshop on Hot Topics in Networks* (2018).

[1] "Why is the Internet so Slow?!", Bozkurt, I., Aguirre, A., Chandrasekaran, B., Godfrey, B., Laughlin, G., Maggs, B., Singla, A. *Passive and Active Measurement - 18th International Conference, PAM 2017, Sydney, NSW, Australia, March 30-31, 2017, Proceedings. Lecture Notes in Computer Science* 10176, pp. 173-187 Springer (2017).

Refereed Articles

[201] "Do Oceanic Convection and Clathrate Dissociation Drive Europa's Geysers?" Shibley, N. C. & Laughlin, G. *Planetary Science Journal* **2** 6 221 10 pp. (2021).

[200] "Constraints on the Occurrence of 'Oumuamua-like Objects" Levine, W. G., Cabot, S. H. C., Seligman, D. & Laughlin, G. Astrophysical Journal, 922, 39 15 pp. (2021).

[199] "SOLES I: The Spin-Orbit Alignment of K2-140b" Rice, M. and 10 co-authors including Laughlin, G. *Astronomical Journal*, **162** 182 7 pp. (2021).

[198] "On the Spin Dynamics of Elongated Minor Bodies with Applications to a Possible Solar System Analogue Composition for 'Oumuamua" Seligman, D., Levine, W. G., Cabot, S.H. C., Laughlin, G., & Meech, K. The Astrophysical Journal 920, 28 12 pp. (2021).

[197] "Follow-up of non-transiting planets detected by Kepler. Confirmation of three hot-Jupiters and validation of three other planets" Lillo-Box, J., Millholland, S., & Laughlin, G. *Astronomy and Astrophysics* **654**, A9 16 pp. (2021).

[196] "Evidence Suggesting that 'Oumuamua is the 30 Myr Old Product of a Molecular Cloud" Hsieh, C.-H., Laughlin, G. & Arce, H. G. *Astrophysical Journal* **917** 20 9 pp. (2021).

[195] “The Aligned Orbit of the Eccentric Warm Jupiter K2-232b” Wang S. and 10 co-authors including Laughlin, G. *Astronomical Journal* **162** 2 6 pp. (2021)

[194] “Transiting Exoplanet Monitoring Project (TEMP). VI. The Homogeneous Refinement of System Parameters for 39 Transiting Hot Jupiters with 127 New Light Curves” Wang, X.-Y. and 13 co-authors including Laughlin, G. *Astrophysical Journal Supplement Series*, 255, 15 18 pp. (2021).

[193] “Assessing the Formation of Solid Hydrogen Objects in Starless Molecular Cloud Cores” Levine, W. G. & Laughlin, G. *Astrophysical Journal*, **912**, 3 17 pp. (2021).

[192] “A Collage of Small Planets from the Lick-Carnegie Exoplanet Survey: Exploring the Super-Earth and Sub-Neptune Mass Regime” Burt, J. and 14 co-authors including Laughlin, G. *Astronomical Journal*, **161**, 25 pp. (2021).

[191] “Exploring Trans-Neptunian Space with TESS: A Targeted Shift-stacking Search for Planet Nine and Distant TNOs in the Galactic Plane” Rice, M. & Laughlin, G. *Planetary Science Journal*, **1**, 81, 1-18

[190] “Lunar Exploration as a Probe of Ancient Venus” Cabot, S. H. C. & Laughlin, G. *Planetary Science Journal*, **1**, 66, 1-16 (2020).

[189] “EXPRES. I. HD 3651 as an Ideal RV Benchmark” Brewer, J. M. and 12 co-authors including Laughlin, G. *Astronomical Journal*, **160**, 67 (2020).

[188] “Evidence that 1I/2017 U1 (‘Oumuamua) was Composed of Molecular Hydrogen Ice” Seligman, D. & Laughlin, G. *Astrophysical Journal*, **896L**, 8-14 (2020).

[187] “Energy optimization in extrasolar planetary systems: the transition from peas-in-a-pod to runaway growth” Adams, F. C., Batygin, K., Bloch, A. M. & Laughlin, G. *Monthly Notices of the Royal Astronomical Society* **493**, 5520-5531 (2020).

[186] “Hidden Planets: Implications from ‘Oumuamua and DSHARP” Rice, M. & Laughlin, G. *Astrophysical Journal* **884**, 22-30 (2019).

[185] “The world that came in from the cold” Laughlin, G. *Science* **365**, 1382-1383 (2019).

[184] “Signatures of Obliquity in Thermal Phase Curves of Hot Jupiters” Adams, A., Millholland, S, & Laughlin, G. *Astronomical Journal* **158**, 108-129 (2019).

[183] “The Case for a Large-scale Occultation Network”, Rice, M. & Laughlin, G. *Astronomical Journal* **158** 19-43 (2019).

[182] “On the Anomalous Acceleration of 1I/2017 U1 ‘Oumuamua, Seligman, D., Laughlin, G & Batygin, K. *Astrophysical Journal Letters* **876** 26-32 (2019).

[181] “HD 2685 b: a hot Jupiter orbiting an early F-type star detected by TESS”, Jones, M. and 51 co-authors including Laughlin, G. *Astronomy & Astrophysics*, **625**, 16 (2019).

[180] “Obliquity-driven sculpting of Planetary Systems”, Millholland, S. & Laughlin, G. *Nature Astronomy*, **3**, 424-433 (2019).

[179] “HD 202772A b: A Transiting Hot Jupiter around a Bright, Mildly Evolved Star in a Visual Binary Discovered by *TESS*” Wang, S. and 60 co-authors including Laughlin, G., *Astronomical Journal* **157**, 51-62 (2019).

[178] “Transiting Exoplanet Monitoring Project (TEMP). V. Transit Follow Up for HAT-P-9b, HAT-P-32b, and HAT-P-36b Wang, Y. and 14 co-authors including Laughlin, G. *Astronomical Journal* **157** 82-99 (2019).

[177] “Mass-Radius Relations of Giant Planets: The Radius Anomaly and Interior Models”, Laughlin, G. *Handbook of Exoplanets*, Deeg H., & Belmonte J. (eds.) Springer, pp. 1-17 (2018).

[176] “An Orbital Window into the Ancient Sun’s Mass”, Spalding, C., Fischer, W. & Laughlin, G. *Astrophysical Journal Letters*, **869**, 19 (2018).

[175] “Obliquity Tides May Drive WASP-12b’s Rapid Orbital Decay”, Millholland, S. & Laughlin, G. *Astrophysical Journal Letters,* **869**, 15 (2018).

[174] “TESS Discovery of a Transiting Super-Earth in the pi Mensae System”, Huang, C. and 65 co-authors including Laughlin, G. *Astrophysical Journal Letters,* **868**, 39 (2018).

[173] “Transiting Exoplanet Monitoring Project (TEMP). I. Refined System Parameters and Transit Timing Variations of HAT-P-29b”, Wang, S. and 14 co-authors including Laughlin, G. *Astronomical Journal* **156**, 181 (2018).

[172] “TTV-determined Masses for Warm Jupiters and Their Close Planetary Companions”, Wu, D.-H., Wang, S., Zhou, J.-L., Steffen, J. & Laughlin, G. Astronomical Journal, **156**, 96 (2018).

[171] “Reassessing Exoplanet Light Curves with a Thermal Model”, Adams, A. & Laughlin G. *Astronomical Journal*, **156**, 28 (2018).

[170] “Transiting Exoplanet Monitoring Project (TEMP). IV. Refined System Parameters, Transit Timing Variations, and Orbital Stability of the Transiting Planetary System HAT-P-25”, Wang X.-Y. and 14 co-authors including Laughlin, G. *Astronomical Journal*, **155**, 70 (2018).

[169] “The Feasibility and Benefits of In Situ Exploration of ‘Oumuamua-like Objects”, Seligman, D. & Laughlin, G. *Astronomical Journal*, **155**, 217 (2018).

[168] “New Constraints on Gliese 876—Exemplar of Mean-motion Resonance” Millholland, S. and 9 co-authors including Laughlin, G. *Astronomical Journal*, **155**, 70 (2018).

[167] “Transiting Exoplanet Monitoring Project (TEMP). III. On the Relocation of the Kepler-9 b Transit” Wang, S. and 26 co-authors including Laughlin, G. *Astronomical Journal*, **155**, 70 (2018).

[166] “Stellar Spin-Orbit Alignment for Kepler-9, a Multi-transiting Planetary System with Two Outer Planets Near 2:1 Resonance” and 6 co-authors, including Laughlin, G. *Astronomical Journal*, **155**, 70 (2018).

[165] “Kepler Multi-planet Systems Exhibit Unexpected Intra-system Uniformity in Mass and Radius” Millholland, S., Wang, S. & Laughlin, G. *Astrophysical Journal*, **849**, 33 (2017).

[164] “A Six-planet System around the Star HD 34445” Vogt, S. and 12 co-authors, including Laughlin, G. *Astronomical Journal*, **154**, 49 (2017).

[163] “A Vorticity-preserving Hydrodynamical Scheme for Modeling Accretion Disk Flows” Seligman, D. & Laughlin, G. *Astrophysical Journal*, **848**, 54 (2017).

[162] “Supervised Learning Detection of Sixty Non-transiting Hot Jupiter Candidates” Millholland, S. & Laughlin, G. *Astronomical Journal*, **154**, 83 (2017).

[161] “Transiting Exoplanet Monitoring Project (TEMP). II. Refined System Parameters and Transit Timing Analysis of HAT-P-33b” Wang Y.-H. and 21 co-authors, including Laughlin, G. *Astronomical Journal*, **154**, 49 (2017).

[160] “The LCES HIRES/Keck Precision Radial Velocity Exoplanet Survey” Butler, R. P. and 10 co-authors, including Laughlin, G. *Astronomical Journal*, **153**, 208 (2017).

[159] “Constraints on Planet Nine’s Orbit and Sky Position within a Framework of Mean-Motion Resonances” Millholland, S. & Laughlin G. *Astronomical Journal*, **153**, 91 (2017).

[158] “A Compound Duration Model for High-Frequency Asset Returns” Aldrich, E., Heckenbach, I. & Laughlin, G. Journal of Empirical Finance (2016), 39(A), 105.

[157] “Planet-induced Stellar Pulsations in HAT-P-2's Eccentric System”, de Wit, J and 15 co-authors, including Laughlin, G. *Astrophysical Journal*, **836**, 17 (2017).

[156] “In Situ Formation and Dynamical Evolution of Hot Jupiter Systems”, Batygin, K., Bodenheimer, P. &Laughlin, G. *Astronomical Journal*, **153**, 91 (2016).

[155] “State of the Field: Extreme Precision Radial Velocities”, Fischer, D. & 55 co-authors, including Laughlin, G. *Proceedings of the Astronomical Society of the Pacific*, **128**, 6001 (2016).

[154] “The Hunt for Planet Nine” Fortney, J., and 9 co-authors, including Laughlin, G. *Astrophysical Journal*, **824**, 25 (2016).

[153] “Planet Formation Imager (PFI): Science Vision and Key Requirements” Kraus, S. & 77 coauthors including Laughlin, G. *Proceedings of the SPIE*, **9907**, 1 (2016).

[152] "3.6 and 4.5 μm Spitzer Phase Curves of the Highly Irradiated Hot Jupiters WASP-19b and HAT-P-7b" Wong, I., and 17 co-authors, including Laughlin, G. *Astrophysical Journal*, **823**, 122 (2016).

[151] "The Transiting Exoplanet Survey Satellite" Ricker, G. R. & 36 co-authors including Laughlin, G. *Proceedings of the SPIE*, **9904**, 2 (2016).

[150] "On the Detection of Non-transiting Hot Jupiters in Multiple-planet System", Millholland, S., Wang, S., & Laughlin, G. *Astrophysical Journal*, 823, 7 (2016).

[149] "Direct Measure of Radiative and Dynamical Properties of an Exoplanet Atmosphere'', de Wit, J., and 6 co-authors, including Laughlin G. *Astrophysical Journal*, **820**, L33 (2016).

[148] "The Lick-Carnegie Exoplanet Survey: HD 32963 – A New Jupiter Analog Orbiting a Sun-Like Star" Rowan, D., Meschiari, S., Laughlin, G., Vogt, S., Butler, R. P., Burt, J., Wang, S., Holden, B., Hanson, R., Arriagada, P., Keiser, S., Teske, J., Dias, M. A. *Astrophysical Journal*, **817**, 104 (2016).

[147] "Thirty Meter Telescope Detailed Science Case: 2015" Skidmore, W. and 140 co-authors including Laughlin, G. (2015) http://arxiv.org/abs/1505.01195.

[146] "Six Planets Orbiting HD 219134" Vogt, S. S., Burt, J., Meschiari, S. Butler, R. P., Henry, G. W., Wang, S., Holden, B., Gapp, C., Hanson, R., Arriagada, P., Keiser, S., Teske, J. & Laughlin, G. *Astrophysical Journal* (2015) **814**, 12.

[145] "3.6 and 4.5 micron Phase Curves of the Highly-Irradiated Eccentric Hot Jupiter WASP-14b" Wong, I., Knutson, H. A., Lewis, N. K., Kataria, T., Burrows, A., Fortney, J. J., Scwartz, J., Agol, E., Cowan, N. B., Deming, D., Desert J.-M., Fulton, B. J., Howard, A. W., Langton, J., Laughlin, G., Showman, A, Todorov, K. *Astrophysical Journal* (2015) **811**, 122.

[144] "A Ground-Based Albedo Upper Limit for HD 189733b from Polarimetry", Wiktorowicz, S. J., Nofi, L., Jontof-Hutter, D., Kopparla, P., Laughlin, G., Hermis, N., Yung, Y. L., & Swain, M. R. *Astrophysical Journal* (2015) **813**, 48.

[143] "Astronomy: A Mars-sized exoplanet", Laughlin, G. *Nature*, **522**, 290-291.

[142] "Spitzer Secondary Eclipse Observations of Five Cool Gas Giant Planets and Empirical Trends in Col Planet Emission Spectra", Kammer, J. and 17 co-Authors, *Astrophysical Journal*, (2015) **118**, 16.

[141] "The capabilities and performance of the Automated Planet Finder Telescope with the implementation of a dynamic scheduler", Burt, J, Holden, B. Hanson, R., Laughlin, G., Vogt, S., Butler, R. P., & Keiser, S. *SPIE Journal of Astronomical Telescopes, Instruments, and Systems,* (2015) **1**, id.044003.

[140] "Jupiter's decisive role in the inner Solar System's early evolution", Batygin, K. & Laughlin, G. *Proceedings of the National Academy of Sciences*, **112**, 14, 4214-4217. (2015). http://arxiv.org/abs/1503.06945

[139] "Exoplanetary Geophysics – An Emerging Discipline " Laughlin, G. & Lissauer, J. J. *Treatise on Geophysics, 2nd Edition*, Springer Academic Publishers. In Press (2015). http://arxiv.org/abs/1501.05685

[138] "The Transiting Exoplanet Survey Satellite", Ricker, G. and 59 co-Authors, *SPIE Journal of Astronomical Telescopes, Instruments, and Systems*, 1(1), 014003 (2015).

[137]"Insights into High Frequency Trading From the Virtu Initial Public Offering", Laughlin, G. UCSC Center for Analytical Finance Working Paper #11 (2015).
http://cafin.ucsc.edu/research/work_papers/CAFIN_WP11.pdf

[136] "Toward the Detection of Exoplanet Transits with Polarimetry", Wiktorowicz, S. J. & Laughlin, G. *The Astrophysical Journal*, **795**, Issue 1, article id. 12, 6pp. (2014).

[135] "The Random Walk of High Frequency Trading", Aldrich, E., Heckenbach, I. & Laughlin, G. UCSC Center for Analytical Finance Working Paper #10 (2014),
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2481201

[134] "Constraints on the Atmospheric Circulation and Variability of the Eccentric Hot Jupiter XO-3b", Wong, I., Knutson, H., Cowan, N., Lewis, N. Agol, E., Burrows, A., Deming, D., Fortney, J., Fulton, B., Langton, J., Laughlin, G. & Showman, A. *The Astrophysical Journal*. 794, Issue 2, article id. 134, 12 pp. (2014).

[133] "The 4.5-micron Full-Orbit Phase Curve of the Hot Jupiter HD 209458b", Zellem, R. T., Lewis, N., Knutson, H., Griffith, C., Showman, A., Fortney, J., Cowan, N., Agol, E., Burrows, A., Charbonneau, D., Deming, D., Laughlin, G., Langton, J. *The Astrophysical Journal*, **790**, 53, 9 pp. (2014).

[132] "The Lick-Carnegie Exoplanet Survey: Gliese 687b: A Neptune-Mass Planet Orbiting a Nearby Red Dwarf" Burt, J., Vogt, S. S., Butler, R. P., Hanson, R., Meschiari, S., Rivera, E. J., Henry, G. W., & Laughlin, G. *Astrophysical Journal*, **789** (2), 114, 14 pp. (2014).

[131] "Information Transmission between Financial Markets in Chicago and New York" Laughlin, G., Aguirre, A. & Grundfest, J. *The Financial Review -- Special Issue: Computerized and High-Frequency Trading*, **49** (2) 283-312 (2014). http://onlinelibrary.wiley.com/doi/10.1111/fire.12036/abstract

[130] "APF – The Lick Observatory Automated Planet Finder" Vogt, S. S. & 46 co-Authors, *Proceedings of the Astronomical Society of the Pacific*, **126**, 938, 359-379. (2014).

[129] "A 4-Planet System Orbiting the K0V Star HD 141399" Vogt, S. S., Butler, R. P., Rivera, E. J., Kibrick, R., Burt, J., Hanson, R., Meschiari, S., & Laughlin, G. *The Astrophysical Journal*, **787** (2), 97, 10 pp. (2014).

[128] "Exoplanet Detection Techniques" Fischer, D., Howard, A., Laughlin, G., Macintosh B., Mahadevan, S., Sahlmann, J., Yee, J. in *Protostars and Planets VI*, Henrik Beuther, Ralf S. Klessen, Cornelis P. Dullemond, and Thomas Henning (eds.), University of Arizona Press, Tucson, p.715-737 (2014).

[127] "Observational Constraints on the Tidal Luminosity, the Heating Rate, and the Spin Period of the Highly Eccentric Planet HD 80606b" Langton, J., Laughlin, G., Batygin, K., Deming, D., Fortney, J., & Hanson, R., *Astrophysical Journal*, Submitted. (2014).

[126] "A Spitzer Search for Transits of Radial Velocity Detected Super-Earths" Kammer, J. A., Knutson, H. A., Howard, A. W., Laughlin, G. P., Deming, D., Todorov, K. O., Desert, J.-M., Agol, E., Burrows, A., Fortney, J. J., Showman, A. P., & Lewis, N. K. *The Astrophysical Journal*, **781** (2) 103, 6 pp. (2014).

[125] "Secondary Eclipse Photometry of the Exoplanet WASP-5b with Warm Spitzer" Baskin, N. J., Knutson, H. A., Burrows, A., Fortney, J. J., Lewis, N. K., Agol. E., Charbonneau, D., Cowan, N. B., Deming D., Desert, J.-M., Langton, J., Laughlin, G., & Showman, A. P. *The Astrophysical Journal*, **773**, 124. (2013).

[124] "Warm Spitzer Photometry of Three Hot Jupiters: HAT-P-3b, HAT-P-4b and HAT-P-12b" Todorov, K. O., Deming, D., Knutson, H. A., Burrows, A., Fortney, J. J., Lewis, N. K., Cowan, N. B., Agol. E., Desert, J.-M., Sada, P. V., Charbonneau, D., Laughlin, G., Langton, J. & Showman, A. P., *Astrophysical Journal*, **770**, 102 (2013).

[123] "Host Star Properties and Transit Exclusion for the HD 38529 Planetary System" Henry, G., Kane, S. R., Wang, S. X., Wright, J. T., Boyajian, T. S., von Braun, K., Ciardi, D. R., Dragomir, D., Farrington, C., Fischer, D. A., Hinkel, N. R., Howard, A. W., Jensen, E., Laughlin, G., Mahadevan, S., & Pilavsky, G. *Astrophysical Journal*, **768**, 155. (2013).

[122] "The Minimum-mass Extrasolar Nebula: In-Situ Formation of Close-In Super-Earths" Chiang, E. and Laughlin, G. *Monthly Notices of the Royal Astronomical Society*, **431**, 4, 3444. (2013).

[121] "Orbital Phase Variations of the Eccentric Giant Planet HAT-P-2B" Lewis, N. K., Knutson, H. A., Showman, A. P., Cowan, N. B., Laughlin, G., Burrows, A., Deming, D., Crepp, J. R., Mighell, K. J., Agol, E., Bakos, G. A., Charbonneau, D., Desert, J.-M., Fischer, D. A., Fortney, J. J., Hartman, J. D., Hinkley, S., Howard, A. W., Johnson, J. A., Kao, M., Langton, J., Marcy, G. W., Winn, J. *Astrophysical Journal*, **766**, 95. (2013).

[120] "The HD 192263 System: Planetary Orbital Period and Stellar Variability Disentangled" Dragomir, D., Kane, S. R., Henry, G. W., Ciardi, D. R., Fischer, D. A., Howard, A., Jensen, E. L., Laughlin, G., Mahadevan, S., Matthews, J. M., Pilyavsky, G., von Braun, K., & Wang, S. X. *The Astrophysical Journal*, **754**, 37 (2012).

[119] "3.6 and 4.5 micron Phase Curves and Evidence for Non-equilibrium Chemistry in the Atmosphere of Extrasolar Planet HD 189733b" Knutson, H., Lewis, N, Fortney, J., Burrows, A., Showman, A. P., Cowan, N. B., Agol, E., Aigrain, S., Charbonneau, D., Deming, D., Desert, J.-M., Henry, G. W., Langton, J. & Laughlin, G. *Astrophysical Journal*, **754**, 22 (2012).

[118] "The Effect of Population-wide Mass-to-radius Relationships on the Interpretation of Kepler and HARPS Super-Earth Occurrence Rates" Wolfgang, A. & Laughlin, G., *Astrophysical Journal*, **750**, 148 (2012).

[117] "Warm Spitzer Observations of Three Hot Exoplanets: XO-4b, HAT-P-6b, and HAT-P-8b" Todorov, K. O., Deming, D., Knutson, H. A., Burrows, A., Sada, P. V., Cowan, N. B., Agol, E., Desert, J.-M., Fortney, J. L., Charbonneau, D., Laughlin, G., Langton, J., Showman, A. P. & Lewis, N. K., *Astrophysical Journal*, **746**, 111 (2012).

[116] "A Search for the Transit of HD 168443b: Improved Orbital Parameters and Photometry" Pilyavsky, G., Mahadevan, S., Kane, S., Howard, A., Ciardi, D., de Pree, C., Dragomir, D., Fischer, D., Henry, G. W., Jensen, E., Laughlin, G., Marlowe, H., Rabus, M., von Braun, K., Wright, J. & Wang, X., *Astrophysical Journal*, **743**, 162 (2012).

[115] "Kepler Exoplanet Candidate Host Stars are Preferentially Metal Rich" Schlaufman, K. C. & Laughlin, G. Astrophysical Journal, **738**, 177 (2011).

[114] "A Spitzer Transmission Spectrum for the Exoplanet GJ 436b, Evidence for Stellar Variability, and Constraints on Dayside Flux Variations" Knutson, H. A., Madhusudhan, N., Cowan, N., Christiansen, J. L., Agol, E., Deming, d., Desert, J.-M., Charbonneau, D., Henry, G. W., Homeier, D., Langton, J., Laughlin, G., Seager, S., *Astrophysical Journal*, **735**, 27 (2011)

[113] "Improved Orbital Parameters and Transit Monitoring for HD 156846b" Kane, S., Howard, A., Pilyavsky, G., Mahadevan, S., Henry, G. W., von Braun, Ciardi, D. R., Dragomir, D., Fischer, D., Jensen, E., Laughlin, G., Ramirez, S. & Wright, J. T. *Astrophysical Journal*, **733**, 28 (2011).

[112] "Resolving the sin(*I*) Degeneracy in Low-mass Multi-planet Systems" Batygin, K. & Laughlin, G. *Astrophysical Journal*, **730**, 95 (2011).

[111] "On the Anomalous Radii of the Transiting Extrasolar Planets" Laughlin, G., Crismani, M. & Adams, F. C., *Astrophysical Journal Letters*, **729**, 7 (2011).

[110] "The Lick-Carnegie Survey: Four New Exoplanet Candidates" Meschiari, S., Laughlin, G., Vogt, S. S., Butler, R. P., Rivera, E. J., Haghighipour, N., Jalowiczor, P., *Astrophysical Journal*, **727**, 117 (2011).

[109] "Secondary Eclipse Photometry of WASP-4b with Warm Spitzer" Beerer, I. M., Knutson, H. A., Burrows, A., Forntey, J. J., Agol, E., Charbonneau, D., Cowan, N. B., Deming, D., Desert, J.-M., Langton, J., Laughlin, G., Lewis, N. K., & Showman, A. P., *Astrophysical Journal* **727**, 23 (2011).

[108] "Warm Spitzer Photometry of the Transiting Exoplanets CoRoT-1 and CoRoT-2 at Secondary Eclipse" Deming, D., Knutson, H., Agol, E., Desert, J.-M., Burrows, A., Fortney, J. J., Charbonneau, D., Cowan, N. B., Laughlin, G., Langton, J., Showman, A. P. & Lewis, N. K. *Astrophysical Journal*, **726**, 95 (2011).

[107] "A Scientometric Prediction of the Discovery of the First Potentially Habitable Planet with a Mass Similar to Earth" Arbesman, S. & Laughlin, G. *PLoS ONE,* **5**(10): e13061. doi:10.1371/journal.pone.0013061 (2010).

[106] "A dance of extrasolar planets" Laughlin, G., *Science*, **330**, 47-48 (2010).

[105] "A Physically-motivated photometric calibration of M-dwarf metallicity" Schlaufman, K. & Laughlin, G. *Astronomy and Astrophysics*, **519**, 105-111 (2010).

[104] "The Lick-Carnegie Exoplanet Survey: A Uranus-Mass Fourth Planet for GJ 876 in an Extrasolar Laplace Configuration" Rivera, E. J., Laughlin, G., Butler, R. P., Vogt, S., Haghighipour, N., & Meschiari, S. *The Astrophysical Journal*, **719**, 890-899 (2010).

[103] "Systemic: A Testbed for Characterizing the Detection of Extrasolar Planets. II. Numerical approaches to the Transit Timing Inverse Problem" Meschiari, S. & Laughlin, G. *Astrophysical Journal* **718**, 543-540 (2010).

[102] "The Lick-Carnegie Exoplanet Survey: A Saturn-Mass Planet in the Habitable Zone of the Nearby M4V Star HIP 57050" Haghighipour, N.,Vogt, S. S., Butler, R. P., Rivera, E. J., Laughlin, G., Meschiari, S., Henry, G. W., *Astrophysical Journal*, **715**, 271-276 (2010).

[101] "A Super-Earth Orbiting the Nearby Sun-like Star HD 1461" Rivera, E. J., Butler, R. P., Vogt, S. S., Laughlin, G., Henry, G. W., & Meschiari, S. *Astrophysical Journal*, **708**, 1492-1499 (2010).

[100] "A long-period planet orbiting a nearby Sun-like star" Jones, H. R. A., Butler, R. P., Tinney, C. G., O'Toole, S. S., Wittenmyer, R.,Vogt, S., Rivera, E., Laughlin, G., Meschiari, S., Carter, B. D., Bailey, J., Jenkins, J. S. *Monthly Notices of the Royal Astronomical Society*, **403**, 1703-1713 (2010).

[99] "A Super-Earth and two Neptunes Orbiting the Nearby Sun-like star 61 Virginis" Vogt, S. S., Wittenmyer, R. A., Butler, R. P., O'Toole, S., Henry, G. W., Rivera, E. J., Meschiari, S., Laughlin, G., Tinney, C. G., Jones, H. R. A., Bailey, J., Carter, B. D., Batygin, K. *Astrophysical Journal*, **708**, 1366-1375 (2010).

[98] "Refining Exoplanet Ephemerides and Transit Observing Strategies" Kane, S. R., Mahadevan, S., von Braun, K., Laughlin, G. & Ciardi, D. R. *Publications of the Astronomical Society of the Pacific*, **121**, 1386-1394 (2009).

[97] "Determination of the Interior Structure of Transiting Planets in Multiple-Planet Systems" Batygin, K., Bodenheimer, P. & Laughlin, G. *Astrophysical Journal Letters*, **704**, L49-L53 (2009).

[96] "Systemic: A Testbed for Characterizing the Detection of Extrasolar Planets. I. The Systemic Console Package" Meschiari, S., Wolf, A., Rivera, E., Laughlin, G., Vogt, S. & Butler, R. P. *Proceedings of the Astronomical Society of the Pacific*, **121**, 1016-1027 (2009).

[95] "Discovery and Characterization of Transiting Super Earths Using an All-Sky Transit Survey and Follow-up by the James Webb Space Telescope" Deming, D., Seager, S., Winn, J., Miller-Ricci, E., Clampin, M., Lindler, D., Greene, T., Charbonneau, D., Laughlin, G., Ricker, G., Latham, D., & Ennico, K., *Proceedings of the Astronomical Society of the Pacific*, **883**, 952-967 (2009).

[94] "Characterization of the HD 17156 planetary system" Barbieri, M., Alonso, R., Desidera, S., Sozzetti, A., Martinez-Fiorenzano, A. F., Almenara, J. M., Cecconi, M., Claudi, R. U., Charbonneau, D.,

Endl, M., Granata, R., Gratton, R., Laughlin, G., Loeillet, B. *Astronomy and Astrophysics*, **503**, 601-612 (2009).

[93] "A Quasi-stationary Solution to Gliese 436b's Eccentricity" Batygin, K., Laughlin, G., Meschiari, S., Rivera, E., Vogt, S., & Butler, P. *Astrophysical Journal,* **699**, 23-30 (2009).

[92] "Formation and Detection of Earth Mass Planets around Low Mass Stars." Montgomery, R. & Laughlin, G. *Icarus*, **202**, 1-11 (2009).

[91] "The Solar System's Extended Shelf Life" Laughlin, G. *Nature,* **459**, 781-782 (2009).

[90] "Rapid heating of the atmosphere of an extrasolar planet" Laughlin, G., Deming, D., Langton, J., Kasen, D., Vogt, S., Butler, P., Rivera, E., Meschiari, S. *Nature*, **457**, 562-564 (2009).

[89] "A Neptune-mass Planet Orbiting the Nearby G Dwarf HD 16417" O'Toole, S., Tinney, C. G., Butler, R. P., Jones, H. R. A., Bailey, J., Carter, B. D., Vogt, S., Laughlin, G. & Rivera, E. J. *Astrophysical Journal*, **697**, 1263-1268 (2009).

[88] "Saturn Forms by Core Accretion in 3.4 Myr" Dodson-Robinson, S. E., Bodenheimer, P., Laughlin, G., Willacy, K., Turner, N. J., & Beichman, C. A. *Astrophysical Journal,* **688**, L99-L102 (2008).

[87] "Worlds Beyond: A Strategy for the Detection and Characterization of Exoplanets Executive Summary of a Report of the ExoPlanet Task Force Astronomy and Astrophysics Advisory Committee Washington, DC June 23, 2008" Lunine, J., Fischer, D., Hammel, H. B., Henning, T., Hillenbrand, L., Kasting, J., Laughlin, G., Macintosh, B., Marley, M., Melnick, G., Monet, D., Noecher, C., Peale, S., Quirrenbach, A., Seager, S. & Winn, J. *Astrobiology*, **8**, 875-881 (2008).

[86] "On the Dynamical Stability of the Solar System" Batygin, K. & Laughlin, G. *Astrophysical Journal*, **683**, 1207-1216. (2008).

[85] "Darwin Tames an Andromeda Dwarf: Unraveling the Orbit of NGC 205 Using a Genetic Algorithm" Howley, K. M., Geha, M., Guhathakurta P., Montgomery, R. M., Laughlin, G., & Johnston, K. V. *Astrophysical Journal*, **683**, 722-749 (2008).

[84] "The Potential Impact of Groove Modes on Type II Planetary Migration." Meschiari, S. & Laughlin, G. *Astrophysical Journal Letters*, **679**, L135-L138 (2008).

[83] "Turbulence in Extrasolar Planetary Systems Implies that Mean Motion Resonances are Rare." Adams, F. C., Laughlin, G., & Bloch, A. M., *Astrophysical Journal*, **683**, 1117-1128 (2008).

[82] "Formation and Detectability of Terrestrial Planets around Alpha Centauri B." Guedes, J. M., Rivera, E. J., Davis, E., Laughlin, G., Quintana, E. V., & Fischer, D. A. *Astrophysical Journal*, **679**, 1582-1587 (2008).

[81] "Hydrodynamic Simulations of Unevenly Irradiated Jovian Planets.'' Langton, J. & Laughlin, G. *Astrophysical Journal* **674**, 1106-1116 (2008).

[80] “Persistent circumpolar vortices on the extrasolar giant planet HD 37605 b” Langton, J. & Laughlin, G. *Astronomy and Astrophysics* **483**, L25-L28 (2008).

[79] “Parameters and Predictions for the Long-Period Transiting Planet HD 17156b.” Irwin, J., Charbonneau, D., Nutzman, P., Welsh, W., Rajan, A., Hidas, M., Brown, T., Lister, T., Davies, D., Laughlin, G., & Langton, J., *Astrophysical Journal*, **681**, 636-643 (2008).

[78] “Five Planets Orbiting 55 Cancri.” Fischer, D. A., Marcy, G. W., Butler, R. P., Vogt, S. S., Laughlin, G., Henry, G., Abouav, D., Peek, K., Wright, J, Hohnson J., *Astrophysical Journal*, **675**, 790-801 (2008).

[77] “Observational Consequences of Hydrodynamic Flows on Hot Jupiters” Langton, J. & Laughlin, G., *Astrophysical Journal Letters*, **657**, L113-L116 (2007).

[76] “Two Jovian-Mass Planets in Earthlike Orbits.” Robinson, S. E., Laughlin, G., Vogt, S. S., Fischer, D. A., Butler, R. P., Marcy, G. W., Henry, G. W., Driscoll, P., Takeda, G., Johnson, J. A. *Astrophysical Journal* **670**, 1391-1400 (2007).

[75] “HD 17156b: a transiting planet with a 21.2-day period and an eccentric orbit.” Barbieri, M., Alonso, R., Laughlin, G., Alemara, J. M., Bissinger, R., Davies, D., Gasparri, D., Guido, E., Lopresti, C., Manzini, F., Sostero, G. *Astronomy and Astrophysics*, **476**, L13-L17 (2007).

[74] “Spitzer Transit and Secondary Eclipse Photometry of GJ 436b.” Deming, D., Harrington, J., Laughlin, G., Seager, S., Navarro, S. B., Bowman, W. C., Horning, K. *Astrophysical Journal*, **667**, 199-202 (2007).

[73] “Are Proxima and Alpha Centauri Gravitationally Bound?” Jeremy Wertheimer and Gregory Laughlin, *The Astronomical Journal*, **132**, 1995-1997 (2006).

[72] “On the Search for Transits of the Planets Orbiting GJ 876.” P. D. Shankland, E. J. Rivera, G. Laughlin, and 12 co-authors, *Astrophysical Journal*, **653**, 700-707 (2006).

[71] “Relativistic Effects in Extrasolar Planetary Systems.” Fred C. Adams and Gregory Laughlin, *International Journal of Modern Physics*, **15**, 2133-2140 (2006). [Note: This paper received Honorable Mention in the 2006 Gravity Research Foundation Competition for Essays on Gravitation.]

[70] “Long-Term Evolution of Close Planets Including the Effects of Secular Interactions.” Fred C. Adams and Gregory Laughlin, *Astrophysical Journal,* **649**, 1004-1009 (2006).

[69] “Effects of Secular Interactions in Extrasolar Planetary Systems.” Fred C. Adams and Gregory Laughlin, *Astrophysical Journal,* **649**, 992-1003 (2006).

[68] “When Extrasolar Planets Transit Their Parent Stars.” D. Charbonneau, T. M. Brown, A. Burrows, G. Laughlin, Review Chapter for *Protostars and Planets V,* V. B. Reipurth, D. Jewitt, & K. Keil (eds.) University of Arizona Press, 701-716 (2007).

[67] "A Determination of the Spin-Orbit Alignment of the Anomalously Dense Planet Orbiting HD 149026." Aaron S. Wolf, Gregory Laughlin, Gregory W. Henry, R., Debra A. Fischer, Geoff W. Marcy. R. Paul Butler, and Steve Vogt, *Astrophysical Journal*, **667**, 549-556 (2007).

[66] "Dynamical Interactions Among Extrasolar Planets and their Observability in Radial Velocity Data Sets.", G. Laughlin and J. Chambers, *in Planetary Systems and Planets in Systems,* ISSI Press, 233-246 (2006).

[65] "The N2K Consortium. VII. Atmospheric Parameters of 1907 Metal-rich Stars: Finding Planet Search Targets.'' Robinson, S. E., Ammons, S. M., Kretke, K. A., Strader, J., Wertheimer, J. G., Fischer, D. A., & Laughlin, G. *Astrophysical Journal Supplement Series*, 2007, **169**, 430-438.

[64] "The N2K Consortium. VI. Doppler Shifts Without Templates and Three New Short-Period Planets." John A. Johnson, Geoffrey W. Marcy, Debra A. Fischer, Gregory Laughlin and 7 coauthors, *Astrophysical Journal,* **647**, pp. 600-611 (2006).

[63] "The 2:1 Resonant Exoplanetary System Orbiting HD 73526." C. G. Tinney, R. P. Butler, G. W. Marcy, H. R. A. Jones, G. Laughlin, B. D. Carter, J. A. Bailey, S. O'Toole, *Astrophysical Journal*, **647**, pp. 594-599 (2006).

[62] "Silicon and Nickel Enrichment in Planet Host Stars: Observations and Implications for the Core Accretion Theory of Planet Formation." Sarah E. Robinson, Gregory Laughlin, Peter Bodenheimer, Debra A. Fischer, *The Astrophysical Journal*, **643**, pp. 484-500 (2006).

[61] "The N2K Consortium. IV. New Temperatures and Metallicities for More than 100,000 FGK Dwarfs." S. Mark Ammons, Sarah E. Robinson, Jay Strader, Jay, Gregory Laughlin, Debra A. Fischer, and Aaron S. Wolf, *The Astrophysical Journal*, **638**, pp. 1004-1017 (2006).

[60] "The N2K Consortium V. Identifying Very Metal-rich Stars with Low-Resolution Spectra: Finding Planet-Search Targets", Robinson, Sarah, E., Strader, Jay, Ammons, S. Mark, Laughlin, Gregory, Fischer, Debra. *The Astrophysical Journal*, **637**, pp. 1102-1112 (2006).

[59] "The N2K Consortium. III. Short-Period Planets Orbiting HD 149143 and HD 109749." Debra A. Fischer, Gregory Laughlin, and 21 co-authors, *The Astrophysical Journal*, **637**, pp. 1094-1101 (2006).

[58] "Planetary Transits of the Trans-Atlantic Exoplanet Survey Candidate TrES-1b."A. Price, R. Bissinger, G. Laughlin, and 10 coauthors, *The Journal of the American Association of Variable Star Observers* **34**, pp. 1-6 (2005).

[57] "M dwarfs: planet formation and long-term evolution." F. C. Adams, P. Bodenheimer, and G. Laughlin, *Astronomische Nachrichten* **326**, pp. 913-919 (2005).

[56] "A ~7.5 Earth-Mass Planet Orbiting the Nearby Star, GJ 876." E. J. Rivera, J. J. Lissauer, R. P. Butler, G. W. Marcy, S. S. Vogt, D. A. Fischer, T. M. Brown, G. Laughlin, and G. W. Henry, *The Astrophysical Journal*, **634**, pp. 625-640 (2005).

[55] "The N2K Consortium. II. A Transiting Hot Saturn around HD 149026 with a Large Dense Core." Bun'ei Sato, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, R. Paul Butler, Geoffrey W. Marcy, Steven S. Vogt, Peter Bodenheimer, Shigeru Ida, E. Toyota, and 11 co-authors. *The Astrophysical Journal*, **633**, pp. 465-473 (2005).

[54] "Five New Multi-component Planetary Systems." Steven. S. Vogt, R. Paul Butler, Geoffrey W. Marcy, Debra A. Fischer, Gregory W. Henry, Gregory Laughlin, Jason T. Wright, John A. Johnson, *The Astrophysical Journal*, **632**, pp. 638-658 (2005).

[53] "On the Eccentricity of HD 209458b." Gregory Laughlin, Geoffrey W. Marcy, Steven S. Vogt, Debra A. Fischer, and R. Paul Butler, *Astrophysical Journal Letters*, **629**, pp. L121-124 (2005).

[52] "A Comparison of Observationally Determined Radii with Theoretical Radius Predictions for Short-Period Transiting Extrasolar Planets." Gregory Laughlin, Aaron S. Wolf, Tonny Vanmunster, Peter Bodenheimer. Debra A. Fischer, Geoffrey W. Marcy, R. Paul Butler, and Steven S. Vogt, *The Astrophysical Journal*, **621**, pp. 1072-1078 (2005).

[51] "The GJ 876 Planetary System: A Progress Report." Gregory Laughlin, R. Paul Butler, Debra A. Fischer, Geoffrey W. Marcy, Steve S. Vogt, and Aaron S. Wolf. *The Astrophysical Journal*, **622**, pp. 1182-1190 (2005).

[50] "The N2K consortium. I. A Hot Saturn Planet Orbiting HD 88133." Debra A. Fischer, Gregory Laughlin, R. Paul Butler, Geoffrey W. Marcy, John Johnson, Gregory W. Henry, Jeff Valenti, Steven S. Vogt, S. Mark Ammons, Sarah Robinson, Greg Spear, Jay Strader, Peter Driscoll, Abby Fuller, Teresa Johnson, Elizabeth Manrao, Chris McCarthy, Melesio Munoz, K.L. Tah, Jason Wright, Shigeru Ida, Bun'ei Sato, Eri Toyota, and Dante Minniti, *The Astrophysical Journal*, **620**, pp. 481-486 (2005).

[49] "Five New Extrasolar Planets," Geoffrey W. Marcy, R. Paul Butler, Steven S. Vogt, Debra A. Fischer, Gregory W. Henry, Greg Laughlin, Jason T. Wright, and John A. Johnson. *The Astrophysical Journal*, **619**, pp. 570-584 (2005).

[48] "Detection of Transits of Extrasolar Giant Planets with Inexpensive Telescopes and CCDs." T. Castellano, G. Laughlin, R. S. Terry, M. Kaufman, S. Hubbert, G. M. Schelbert, D. Bohler, R. Rhodes, *Journal of the American Association of Variable Star Observers*, **33**, pp. 1-21 (2004).

[47] "A Neptune-Mass Planet Orbiting the Nearby M Dwarf GJ 436." R. Paul Butler, Steven S. Vogt, Geoffrey W. Marcy, Debra A. Fischer, Gregory. W. Henry, Gregory Laughlin, and Jack J. Lissauer, *Astrophysical Journal*, **617**, pp. 580-588 (2004).

[46] "The Core Accretion Model Predicts Few Jovian-Mass Planets Orbiting Red Dwarfs." Gregory Laughlin, Peter Bodenheimer, and Fred C. Adams, *Astrophysical Journal Letters*, **612**, L73-L76 (2004).

[45] "Photoevaporation of Circumstellar Disks Due to External FUV Radiation in Stellar Aggregates." Fred C. Adams, David Hollenbach, Gregory Laughlin, and Uma Gorti, *Astrophysical Journal*, **611**, pp. 360-379 (2004).

[44] “Type I. Planetary Migration with MHD Turbulence.” Gregory Laughlin, Adriane Steinacker, and Fred C. Adams, *Astrophysical Journal*, **608**, pp. 489-496 (2004).

[43] “On the Formation of Brown Dwarfs.” Ing-Guey Jiang, Gregory Laughlin, and D. N. C. Lin, *Astronomical Journal*, **127**, pp. 455-459 (2004).

[42] “Detection of Intermediate-Period Transiting Planets with a Network of Small Telescopes: transitsearch.org.” Scott Seagroves, Justin Harker, Gregory Laughlin, Justin Lacy, and Tim Castellano, *Proceedings of the Astronomical Society of the Pacific*, **115**, pp. 1355-1362 (2003).

[41] “Branch, Spur, and Feather Formation in Spiral Galaxies.” Sukanya Chakrabarti, Gregory Laughlin, and Frank H. Shu, *Astrophysical Journal*, **596**, pp. 220-239 (2003).

[40] “On the Radii of Extrasolar Giant Planets.” Peter Bodenheimer, Gregory Laughlin, and D. N. C. Lin, *Astrophysical Journal*, **592**, pp. 555-563 (2003).

[39] “Migration and dynamical relaxation in crowded systems of giant planets.” Fred C. Adams, and Gregory Laughlin, *Icarus*, **163**, pp. 290-306 (2003).

[38] “Seven New Keck Planets Orbiting G & K Dwarfs.” R. P. Butler, G. W. Marcy, S. S. Vogt, D. A. Fischer, G. W. Henry, G. Laughlin, and J. Wright, *Astrophysical Journal*, **582**, pp. 555-563 (2003).

[37] “A Planet at 5 AU Around 55 Cancri.” G. W. Marcy, R. P. Butler, D. A. Fischer, G. Laughlin, S. S. Vogt, G. W. Henry, and D. Pourbaix, *Astrophysical Journal*, **581**, pp. 1375-1388 (2002).

[36] “Self-Similar Champagne Flows in HII Regions.” F. H. Shu, S. Lizano, D. Galli, J. Canto, and G. Laughlin, *Astrophysical Journal*, **580**, pp. 969-979 (2002).

[35] “A Dynamical Analysis of the 47 Ursae Majoris Planetary System.” Gregory Laughlin, John Chambers, and Debra Fischer, *Astrophysical Journal*, **579**, pp. 455-467 (2002).

[34] “An Improved uvby-Metallicity Calibration for Metal-Rich Stars.” Sarah Martell and Gregory Laughlin, *Astrophysical Journal Letters*, **577**, pp. L45-L48 (2002).

[33] “Ten Low Mass Companions from the Keck Precision Velocity Survey.” S. S. Vogt, R. P. Butler, G. W. Marcy, D. A. Fischer, D. Pourbaix, K. Apps, and G. Laughlin, *Astrophysical Journal*, **568**, pp. 352-362 (2002).

[32] “A Second Planet Orbiting 47 Ursae Majoris.” D. A. Fischer, G. W. Marcy, R. P. Butler, G. Laughlin, and S. S. Vogt, *Astrophysical Journal*, **564**, pp. 1028-1034 (2002).

[31] “Extrasolar Trojans: The Viability and Detectability of Planets in the 1:1 Resonance.” Gregory Laughlin and John Chambers, *Astronomical Journal*, **124**, pp. 592-600 (2002).

[30] "Two Substellar Companions Orbiting HD 168443." G.W. Marcy, R. P. Butler, S. S. Vogt, M. C. Liu, G. Laughlin, K. Apps, J. R. Graham, J. Lloyd, K. L. Luhman, and R. Jayawardhana, *Astrophysical Journal*, **555,** pp. 418-425 (2001).

[29] "Short-Term Dynamical Interactions Among Extrasolar Planets." Gregory Laughlin and John Chambers, *Astrophysical Journal Letters*, **551**, pp. 109-113 (2001).

[28] "Constraints on the Birth Aggregate of the Solar System." Gregory Laughlin and Fred Adams, *Icarus*, **150,** pp. 151-162 (2001).

[27] "Singular Isothermal Disks. II. Nonaxisymmetric Bifurcations and Equilibria." Daniele Galli, Frank Shu, Gregory Laughlin, and Susana Lizano, *Astrophysical Journal*, **551**, pp. 367-386 (2001).

[26] "Astronomical Engineering: A Strategy for Modifying Planetary Orbits." Donald Korycansky, Gregory Laughlin and Fred Adams, *Astrophysics and Space Science*, **275** (4), pp. 349-366 (2001).

[25] "Mining the Metal-Rich Stars for Planets." Gregory Laughlin, *Astrophysical Journal*, **545**, pp. 1064-1073 (2000).

[24] "Protostellar Disk Formation and Early Evolution." Fred Adams and Gregory Laughlin, *Space Science Reviews*, **92**, issue 1/2, pp. 23-38 (2000).

[23] "Singular Isothermal Disks: I. Linear Stability Analysis." Frank Shu, Gregory Laughlin, Susana Lizano and Danielle Galli, *Astrophysical Journal*, **535**, pp. 190-210 (2000).

[22] "The Frozen Earth: Binary Scattering Events and the Fate of the Solar System." Gregory Laughlin and Fred Adams, *Icarus*, **145**, pp. 614-627 (2000).

[21] "Stability and Chaos in the Upsilon Andromedae Planetary System." Gregory Laughlin and Fred Adams, *Astrophysical Journal*, **526**, pp. 881-889 (1999).

[20] "Possible Effects of a Cosmological Constant on Black Hole Evolution." Fred Adams, Manasse Mbonye, and Gregory Laughlin, *Physics Letters B*, **450**, pp. 339-342 (1999).

[19] "The Modification of Planetary Orbits in Dense Open Clusters." Gregory Laughlin and Fred Adams, *Astrophysical Journal Letters*, **508**, pp. L171-L174 (1998).

[18] "The Gravitational Demise of Cold Degenerate Stars." Fred Adams, Gregory Laughlin, Manasse Mbonye, and Malcolm Perry, *Physical Review D*, **58**, (08003) pp. 1-7 (1998).

[17] "The Formation of Giant Planets Induced by the Collision of Protostellar Disks." D. N. C. Lin, G. Laughlin, P. Bodenheimer, and M. Rozyczka, *Science*, **281**, pp. 2025-2028 (1998).

[16] "The Dynamics of Heavy Gaseous Disks." Gregory Laughlin, Vladimir Korchagin, and Fred Adams, *Astrophysical Journal*, **504**, pp. 945-966 (1998).

[15] “MACHOs, White Dwarfs, and the Age of the Universe.” David Graff, Gregory Laughlin, and Katherine Freese, *Astrophysical Journal*, **499**, pp. 7-19 (1998).

[14] “Constraints on the Intergalactic Transport of Cosmic Rays.” F. C. Adams, K. Freese, G. Laughlin, N. Schwadron, and G. Tarle, *Astrophysical Journal*, **491**, pp. 6-12 (1997).

[13] “Possible Stellar Metallicity Enhancements from the Accretion of Planets.” Gregory Laughlin and Fred Adams, *Astrophysical Journal Letters*, **491**, pp. L51-L54 (1997).

[12] “The End of the Main Sequence.” Gregory Laughlin, Peter Bodenheimer, and Fred Adams, *Astrophysical Journal*, **482**, pp. 420-432 (1997).

[11] “A Dying Universe: The Long Term Fate and Evolution of Astrophysical Objects.” Fred Adams and Gregory Laughlin, *Reviews of Modern Physics*, **69**, pp. 337-372 (1997).

[10] “Spiral Mode Saturation in Self Gravitating Disks.” Gregory Laughlin, Vladimir Korchagin, and Fred Adams, *Astrophysical Journal*, **477**, pp. 410-423 (1997).

[9] “The Prospects for Earth-Like Planets Within Known Extrasolar Planetary Systems.” Curtis Gehman, Fred Adams. and Gregory Laughlin, *Publications of the Astronomical Society of the Pacific*, **108**, pp. 1018-1023 (1996).

[8] “Implications of White Dwarf Galactic Halos.” Fred Adams and Gregory Laughlin, *Astrophysical Journal*, **468**, pp. 586-597 (1996).

[7] “Nonlinear Generation of One-Armed Spirals in Self-Gravitating Disks.” Gregory Laughlin and Vladimir Korchagin, *Astrophysical Journal*, **460**, pp. 855-868 (1996).

[6] “The Effect of Gravitational Instabilities on Protostellar Disks.” Gregory Laughlin and Michal Rozyczka, *Astrophysical Journal*, **456**, pp. 279-291 (1996).

[5] “The Formation of Protostellar Disks. II. Disks Around Intermediate-Mass Stars.” Harold Yorke, Peter Bodenheimer, and Gregory Laughlin, *Astrophysical Journal*, **443**, pp. 199-208 (1995).

[4] “Non-Axisymmetric Evolution in Protostellar Disks.” Gregory Laughlin and Peter Bodenheimer, *Astrophysical Journal*, **436**, pp. 335-354 (1994).

[3] “The Formation of Protostellar Disks. I. One Solar Mass.” Harold Yorke, Peter Bodenheimer, and Gregory Laughlin, *Astrophysical Journal*, **411**, pp. 274-284 (1993).

[2] “Luminosity Functions for Very Low Mass Stars and Brown Dwarfs.” Gregory Laughlin and Peter Bodenheimer, *Astrophysical Journal*, **403**, pp. 303-314 (1993).

[1] “A Study of the White Dwarf Luminosity Function.” Icko Iben, Jr. and Gregory Laughlin, *Astrophysical Journal*, **341**, pp. 312-326 (1989).

Selected Non-Refereed Publications, Articles and Conference Proceedings

[48] "Oklo: Characterizing Planets", Gregory Laughlin, http://www.oklo.org (475 articles covering planetary systems research) (2005-2021).

[47] "Prediction Tools Can Save Lives in the COVID-19 Crisis", Gregory Laughlin, Anthony Aguirre and Gaia Dempsey *Scientific American* (Opinion) May 12, 2020.

[46] "The world that came in from the cold" Laughlin, G. *Science* 365, 1382-1383 (2019).

[45] "'Oumuamua's Dramatic Visit", Gregory Laughlin, *Sky and Telescope*, October 2018,vol. 136, no 4. p. 20-26 2000-word feature article. (2018).

[44] "Dissecting Latency in the Internet's Fiber Infrastructure" Bozkurt, N. and 7 co-authors, including Laughlin, G. *arXiv.org* https://arxiv.org/abs/1811.10737 (2018).

[43] "cISP: A Speed-of-Light Internet Service Provider" Bhattacherjee, D. and 10 co-authors, including Laughlin, G. *arXiv.org* https://arxiv.org/abs/1809.10897 (2018).

[42] "On the Consequences of the Detection of an Interstellar Asteroid", Laughlin, G. & Batygin K. *RNAAS*, 1, 43 (2017).

[41] "Fly-By of Interstellar Asteroid Portends Quadrillion Trillion More in Galaxy", Gregory Laughlin, *Scientific American Blogs*, Nov. 22, 2017 https://blogs.scientificamerican.com/observations/fly-by-ofinterstellar-asteroid-portends-quadrillion-trillion-more-in-galaxy/

[40] "Born of Chaos – How Raging Bouts of Planetary Destruction Built our Solar System" Batygin, K., Laughlin, G., & Morbidelli, A. *Scientific American* **314**, 5, 10pp., May (2016).

[39] "Can a Living Creature Be as Big as a Galaxy? – Why life is constrained to be about the sizes we see on Earth'', Gregory Laughlin, *Nautilus,* Issue 34 Adaption (2016).
http://nautil.us/issue/34/adaptation/can-a-living-creature-be-as-big-as-a-galaxy

[36] "Third Data Server From the Sun", Gregory Laughlin, *Nautilus*, Issue 13 Symmetry (2014).
http://nautil.us/issue/13/symmetry/third-data-server-from-the-sun

[33] "Will the expanding Sun engulf the Earth?", Gregory Laughlin, *Sky and Telescope Presents "Astronomy's 60 Greatest Mysteries"* (ed. R. Naeye), p. 18 (2013).

[32] "Were the planets always where they are today?", Gregory Laughlin, *Sky and Telescope Presents "Astronomy's 60 Greatest Mysteries"* (ed. R. Naeye), p. 31 (2013).

[31] "How Worlds Get Out of Whack", Gregory Laughlin, *Sky and Telescope*, May 2013, 2400-word feature article. (2013).

[30] Book Review: "The Exoplanet Handbook" Gregory Laughlin, *Physics Today*, Sept. 2012, p. 51 (2012).

[25] "Hanging in the Balance: Could Our Solar System Go Haywire?" Laughlin, G. *Sky and Telescope*, April (2010).

[24] "A New Atmospheric Model for HD 189733b" Langton, J, & Laughlin, G. arXiv/0808.3118 (2008).

[21] "From Here to Eternity – The Fate of the Sun and the Earth." Gregory Laughlin, *Sky and Telescope*, **113**, 32-36 (2007).

[21] "Virtual Planet Sleuths." Gregory Laughlin, *Sky and Telescope*, **112**, 38-43 (2006).

[20] "Extrasolar Planetary Systems." Gregory Laughlin, *American Scientist*, **94**, 420-429 (2006).

[14] "Join the Hunt: Transitsearch.org." Gregory Laughlin and Tim Castellano, *Astronomy*, Vol **33**, No. 1, pp. 54-58 (2003).

[13] "The Galactic Millennium," Gregory Laughlin and Fred Adams, *Astronomy*, Vol. **29,** No. 11, pp. 38-45 (2001).

[11] "Embracing the End," Fred Adams and Gregory Laughlin, *Astronomy*, Vol. **28**, No. 10, pp. 48-53 (2000).

[10] "The Great Cosmic Battle." Fred Adams and Gregory Laughlin, *Mercury*, Vol. **29**, No. 1, pp. 10-15 (2000).

[8] "The Future of the Universe." Fred Adams & Greg Laughlin, *Sky and Telescope,* Vol. **96**, No. 2, pp. 32-40 (1998).

[5] "The Last Stars." Gregory Laughlin, in *Advances in Stellar Evolution*, eds., R.T. Rood, and A. Renzini, (Cambridge University Press: Cambridge), pp. 11-18 (1997).

Selected Outside Professional Activities

2021--- Director, Founder, Lucinetic LLC. www.lucinetic.com
2015--- Director, Founder Metaculus, LLC. www.metaculus.com

2016 Consultant, Presenter "The End" 3 episodes, History Channel
2011-13 Advisor/Consultant, Jybe Inc. (Company successfully acquired by Yahoo! on March 19, 2013)
2013 Consultant/Presenter "Big History: The Big History of Everything" H2 Channel, 12/28, 2013
2013 Consultant/Presenter "Big History: H2O" H2 Channel, Dec. 21, 2013
2013 Consultant/Presenter "Big History: The Sun" H2 Channel, Dec. 14, 2013
2013 Consultant/Presenter "Space Weather" Weather Channel, Season 1

2009-12 White House Office of Science and Technology Policy Appointee: NASA/NSF/DOE Astrophysics Advisory Committee (Washington DC)
2012 Consultant/Presenter "Space Weather" Weather Channel, Season 1, Episode 1
2012 Consultant/Presenter: "Can We Survive the Death of the Sun?" episode of Through the Wormhole with Morgan Freeman Season 4, The Science Channel, Air date: June 12th, 2013.
2011 Consultant/Presenter: "The Universe" H2 Channel, Season 7, Episodes 1-7
2011 Consultant/Presenter: "Money" Documentary Series China Central Television (CCTV)

Performances

2013 [1] "Blueprints" (co-choreographed with Professor Ted Warburton, UCSC Dance Dept.) UCSC Dance Concert, Mainstage Theater, UC Santa Cruz, May 24th – June 2nd , 2013.
http://vimeo.com/75623011

2012 [2] "Three Bodies" (with Ted Warburton, UCSC Dance Dept., Karlton Hester, UCSC Music Dept., Drew Detweiler, UCSC Digital Arts Research Center) Multimedia and Choreographed Performance, ZERO1 Biennial, San Jose CA, September 14th, 2012.

[1] "Three Bodies" (with Ted Warburton, UCSC Dance Dept. & Karlton Hester, UCSC Music Dept.) A Choreographed and Scored Interpretation of Burrau's Pythagorean Three-body Problem, Experimental Theater, UCSC, July 27th, 2012.

2010 [1] "What is the Real Music of the Spheres?" (with Philip Glass) Multimedia-supported Presentation, Brainwave Series, Rubin Museum, New York City, February 21st , 2010.

Selected Recent Media

2021 [2] "Lil Uzi Vert is Apparently Buying a Planet – and It's a Real Steal" *Rolling Stone*, 07/23/21
URL Link

[1] "Oumuamua: It Came From Another Solar System" *New York Times*, Mar 23, 2021
URL Link

2020 [8] "Lighting a path to Planet Nine" Jim Shelton, *Yale News*, Oct. 27, 2020.
URL Link

[7] "In the Hunt for Planet Nine, Astronomers Eye a New Search Technique" Mike Wall, *Scientific American*, Oct. 28 2020
URL Link

[6] "Looking for pieces of Venus? Try the moon" Jim Shelton, *Yale News*, Oct. 7, 2020.
URL Link

[5]"Moon May Harbor Ancient Pieces of Venus' Surface" Bruce Dorminey, Forbes, Oct. 9, 2020
URL Link

[4] “Ahoy! ‘Oumuamua may be a hydrogen iceberg”, Jim Shelton, Yale News, May 29, 2020
URL Link

[3] “Oumuamua: Neither Comet nor Asteroid, but a Cosmic Iceberg” Dennis Overbye, *The New York Times*, June 16, 2020.
URL Link

[2] “`Superforecasters’ Are Making Eerily Accurate Predictions About COVID-19. Our Leaders Could Learn From Their Approach” Tara Law, *Time*, June 11, 2020
URL Link (Describes the Metaculus.com COVID project).

[1] “Predictions are hard, especially about the coronavirus – Expert surveys and online prediction projects have limitations – but we need them badly” Kelsey Piper, *Vox*, Apr. 8, 2020
URL Link (Describes the Metaculus.com COVID project).

2019 [4] “New image offers close-up view of interstellar comet” Jim Shelton, *Yale News*, Nov 26, 2019.
URL Link

[3] “An Interstellar Comet, in Time for the Holidays” Dennis Overbye, New York Times, Oct. 1, 2019 (updated Dec. 24 2019)
URL Link

[2] “Get ready for more interstellar objects, Yale astronomers say”, Jim Shelton, *Yale News*, Sep. 26, 2019
URL Link

[1] “A new theory for ‘Oumuamua: It’s a comet that rocks” Jim Shelton, *Yale News*, Mar. 12 2019
URL Link

2017 [1] “How Humans Might Outlive Earth, the Sun… and Even the Universe” Corey S. Powell, NBC, Dec 20, 2017 https://www.nbcnews.com/mach/science/how-humans-might-outlive-earthsun-even-universe-ncna831291

[2] “Astronomers to Check Mysterious Interstellar Object for Signs of Technology” Marina Koren, *The Atlantic*, Dec. 11, 2017
https://www.theatlantic.com/science/archive/2017/12/yurimilneroumuamua-interstellar-asteroid/547985/

[3] “This is What it Would Take to Kill all Life on Earth” Giorgia Gugliemi, *Science*, Jul 14, 2017
http://www.sciencemag.org/news/2017/07/what-it-would-take-kill-all-life-earth

2016 [1] “Science and Culture: Dancing with Pythagoras” Megan Scudellari, Proceedings of the National Academy of Sciences of the United States of America, **113**, 12, 3123-3124.
http://www.pnas.org/content/113/12/3123

[2] “Investigating the Mystery of Migrating “Hot Jupiters”, NASA JPL Press Release, March 28th 2016
http://www.nasa.gov/feature/jpl/investigating-the-mystery-of-migrating-hot-jupiters

[3] Accused UK trader likely not a factor in ‘flash crash’, John McCrank, Reuters. Jan 27th, 2016 http://www.reuters.com/article/us-flashcrash-trader-report-idUSKCN0V52OW.

2015 [1] “Jupiter might have wrecked the first version of our solar system’’ Rachel Feltman, Washington Post, March 23rd, 2015 http://www.washingtonpost.com/news/speaking-of-science/wp/2015/03/23/jupiter-might-have-wrecked-the-first-version-of-our-solar-system/

2014 [1] “Astrophysicist sheds light on Virtu’s high win-loss trading ratio” Herbert Lash, Reuters. November 13th, 2014. http://www.reuters.com/article/2014/11/13/us-markets-virtu-idUSKCN0IX2N820141113

[2] “’Super Planet Crash’ Game is Like an Astronomer’s Version of ‘Angry Birds’” Jacqueline Howard, Huffington Post. April 10th, 2014. http://www.huffingtonpost.com/2014/04/10/super-planet-crash-game_n_5120708.html

2013 [1] “Time is money when it comes to microwaves” Clive Cookson, Financial Times Weekend Magazine. May 10th, 2013. http://www.ft.com/intl/cms/s/2/2bf37898-b775-11e2-841e-00144feabdc0.html

[2] “Chasing Transits” Roberta Kwok, The Last Word on Nothing. June 14th, 2013. http://www.lastwordonnothing.com/2013/06/14/chasing-transits/

[3] “It Began in Chaos” Robert Irion, National Geographic Magazine, Cover article, July 2013.

Selected Recent Talks

2021 [3] “Deep Prediction: Forecasting on Time Scales from Microseconds to Eons” Wonderfest/Mt. Tam Astronomy Program, June 19, 2021. (Online).

[2] "The D. B. McLaughlin connection -- Solar System dynamics in deep time as expressed by the Newark Supergroup”, Princeton University March 3, 2021. (Online).

[1] “Oumuamua and the Arrival of Interstellar Objects Jump Trading, Chicago IL February 1, 2021(Online).

2020 [2] “Interstellar Objects” Illinois State University Physics Colloquium, September 6, 2020

[1] “’Oumuamua and Borisov” Westport Astronomical Society, June 16, 2020

2019 [1] “Oumuamua’s Brief and Mysterious Visit to the Solar System”, Kavli Foundation Plenary Lecture, 233rd meeting of the American Astronomical Society, Seattle WA, Jan. 7th 2019

2018 [4] “A Large-scale Occultation Network as a Solar System Gravitational Probe”, Heising-Simons Foundation 51 Pegasi b Science Summit, San Francisco, CA August 16th, 2018, Lightning Talk.

[3] “`Oumuamua!” Caltech, March 12tt, 2018, GPS Division Seminar.

[2] “'Oumuamua!” University of Massachusetts, Amherst, February 15th, 2018, Five College Astronomy Department Colloquium.

[1] “A Review of the Discovery and Characterization of ‘Oumuamua, The First Interstellar Asteroid”, January 12th, 2018, NASA Ames Research Center, Mountain View, CA, NAI Team Meeting, Invited Talk

2017 [5] “Poincaré's Legacy: Predictions on Time Scales Ranging from Milliseconds to Billions of Years’’ Northwestern University, November 2nd , 2017, CIERA Interdisciplinary Colloquium

[4] “Extrasolar Planets and Planet Formation” New Haven University, Chemistry and Space Science Forum October 27th , 2017 Invited Talk.

[3]”What is the Tech in Fintech?” Yale School of Management, The Fintech Transformation Conference, October 13th, 2017, Invited talk and Panel Discussant

[2] Boston University Astronomy Department Colloquium

[1] Wesleyan University Astronomy Department Colloquium

2016 [4] “Visualizing Extrasolar Planets” Pixar Animation Studios, Emeryville, CA April 14th, 2016 Invited Talk.

[3] “Extrasolar Planets”, University of Notre Dame, Department of Physics, South Bend, IN, March 30th, 2016 Colloquium.

[2] “Where we came from How the Keck Telescopes are Helping to Decode the Formation of Solar Systems” Honokaa People’s Theatre, Honokaa HI, Feb 4th 2016. Invited Talk.

[1] “Predicting the Future – Form the Here and the Now to Billions of Years Out” Keck Observatory Headquarters Evenings with Astronomers Series, Waimea HI, Feb 3rd 2016, Invited Talk.

2015 [7] “The Galactic Planetary Census” University of Illinois, Department of Astronomy, Urbana Il, October 20th , 2015. Colloquium.

[6] “Poincare’s Legacy” UCSC Physics Department, Santa Cruz, CA October 8th, 2015. Colloquium

[5] “Precision Velocities at the Automated Planet Finder” Yale EPRV Meeting, July 5th, 2015. Invited Talk.

[4] “The Race to Zero -- The Evolution of High Frequency Trading's Information Infrastructure” University of Illinois, Department of Computer Science, Urbana, IL, April 8th, 2015. Invited Talk.

[3] “Latency Arbitrage” Crabel Capital Management, LLC, Los Angeles, CA, March 26th, 2015. Invited Talk.

[2] “The Missing Inner Solar System?” School of Earth and Space Sciences, Arizona State University, March 5th, 2015. Invited Talk.

[1] “Poincaré's Legacy: Predictions on Time Scales Ranging from Milliseconds to Billions of Years” UCSC Dept. of Mathematics, Santa Cruz, CA, January 27th, 2015. Invited Colloquium.

2014 [11] “The APF Telescope and Levy Spectrometer – Going Forward with a World-Class Instrument’’ Levy Spectrometer Celebration, Lick Observatory, Mt. Hamilton, CA, October 5th, 2014. Invited Talk.

[10] “The Missing Inner Solar System” Yale University, New Haven, CT, October 29th, 2014. Invited Colloquium.

[9] “The NASA Tess Mission – An Overview and Context” WMKO Strategic Planning Meeting, Oxnard CA, September 29th, 2014. Invited Plenary Review.

[8] “The Random Walk of High Frequency Trading” Office of the Chief Economist – United States Commodity Futures Trading Commission, Washington DC, September 18th, 2014. Invited Talk.

[7] “Space Exoplanet Missions” Thirty Meter Telescope Science Forum, Tucson, AZ, July 17th, 2014. Invited Plenary Talk.

[6] “Information Transmission Between Financial Markets in Chicago and New York” Office of the Chief Economist – United States Commodity Futures Trading Commission, Washington DC, June 23rd, 2014. Invited (Remote Presentation).

[5] “An Update on the Automated Planet Finder Telescope” NASA TESS Mission Team Meeting, Cambridge, MA, June 5th, 2014. Invited Talk.

[4] “The Trading Arms Race: Recent Evolution of the E-mini – SPY Latency Arbitrage” Inaugural CAFIN Workshop, UCSC, Santa Cruz, CA April 25th, 2014. Invited Discussant Presentation.

[3] “Information Transmission Between Financial Markets in Chicago and New York” Econometrics Workshop, Dept. of Economics, University of Pennsylvania, Philadelphia, PA, April 21, 2014, Invited Talk.

[2] “Planet Formation Simulations” Computational Astrophysics 2014: Approaching Exascale, Lawrence Berkeley Laboratory, Berkeley, CA, March 21st, 2014. Invited Talk.

[1] “The Merits of Eccentric Planets’’ Bay Area Exoplanet Science Meeting, SETI Institute, Mountain View, CA, March 14th, 2014. Contributed Talk.

2013 [9] “Astronomy as a Career” SCHS Career Day Panel, Santa Cruz High School, Santa Cruz, CA, November 21st, 2013. Invited Talk.

[8] “The Three Body Problem (No Longer a Proof Walking on Stilts)”, LASER (Leonardo Art/Science Evening Rendezvous) UCSC Institute of Art and Science, Inaugural Event, October 8th, 2013. Invited Talk.

[7] “Information Transmission Between Financial Markets in Chicago and New York” Trade TechWest , San Francisco, CA, September 9th, 2013. Invited Talk.

[6] “The Detection and Characterization of Extrasolar Planets”, UC Laboratory Fees Research Program Advancing Innovation and Partnership in UC-National Lab Collaborative Research, San Francisco, CA, July 11th, 2013. Invited Talk.

[5] “The Fate of the Solar System”, Santa Cruz Astronomy Club, Santa Cruz, CA, June 13th, 2013.

[4] “The Minimum Mass Extrasolar Nebula – Exploring the Galaxy’s Default Mode of Planet Formation”, NASA Ames Research Center, Moffett Field, CA, May 21st, 2013, Invited Talk.

[3] “University of California Observational Resources that Complement the NASA TESS Mission”, TESS Mission Science Team Meeting, MIT, Cambridge, MA, May 19th, 2013, Invited Talk.

[2] “Information Transmission Between Financial Markets in Chicago and New York”, Financial Mathematics Seminar, Stanford University, Stanford, CA, April 12th, 2013. Seminar Talk.

[1] “Predicting the Future on Timescales from Milliseconds to Billions of Years” Café Scientifique, SRI, Menlo Park, CA, April 9th, 2013. Invited Public Lecture.

2012 [9] “The Fate of the Earth, the Solar System, and the Universe” Florida Museum of Natural History, Gainesville, FL, Nov 30th, 2012, Invited Public Lecture.

[8] “A New Look at the Planetary Census” University of Florida Department of Physics, Gainesville, FL, Nov. 29th, 2012. Colloquium

[7] “Data Sets for Extrasolar Planets” CIDU 2012 (NASA Conference on Intelligent Data Usage) National Center for Atmospheric Research, Boulder, CO. October 25th, 2012. Invited Review.

[6] “The Music of the Spheres.” Applied Brilliance, Sonoma, CA. October 9th, 2012. Invited Talk

[5] “The Way Forward: An Overview of Exoplanet Research at UCSC.” Bay Area Planet Workshop, SETI Institute, Mountain View, CA. June 29th, 2012. Invited Talk.

[4] “The Intersection of Science, Media, and Extrasolar Planets.” HIPACC Boot Camp for Science Journalists, UCSC, Santa Cruz, CA. June 25th, 2012. Invited Talk.

[3] “*Exoplanetology* – the Development of a New Science.” Society of Physics Students Monthly Seminar, Santa Cruz, CA. April 26th, 2012. Invited Talk.

[2] “Astronomical Anagrams.” UCSC Women’s Club, UCSC Arboretum, Santa Cruz, CA. February 1st, 2012. Invited Talk.

[1] “Outlines of the Galactic Planetary Census.” Caltech Department of Geological and Planetary Sciences. Pasadena, CA, January 24th, 2012. Department Colloquium.