

# Curriculum Vitae

## Erez Michaely

### Personal details

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Languages: Hebrew, English

### Research interests

*Stellar and planetary dynamics, which including triple systems, Solar system dynamics, collisional dynamics in low/high-density environments. Gravitational wave sources.*

### Education

CTC-Prize fellow	University of Maryland, College Park, USA. Center for Theory and Computation.	2018-
PhD	TECHNION – Israel Institute of Technology, Dep. of Physics Thesis: “Triple Stellar Dynamics and Evolution and Topics in Astrophysics”. Academic advisor: Prof. Hagai B. Perets	2012-2018
MSc	TECHNION – Israel Institute of Technology, Dep. of Physics Academic advisor: Prof. Shmuel Fishman	2009-2012
BSc	TECHNION – Israel Institute of Technology, Dep. of Physics	2005-2009

### Teaching

2010-2017	<b>Teaching assistant:</b> Physics 1m (for physicists), Physics 2m (for physicists) Physics 2, in the international school (teaching in English). <i>Analytical mechanics</i> (for physicists), <i>Statistical mechanics</i> (for physicists), <i>introduction to General Relativity</i> (Graduate course), <i>introduction to Astrophysics and Cosmology</i> .
2009-2010	<b>Lab instructor:</b> Mechanics, E&M.

### Honors and Awards

2010	Excellent tutor prize – Semester A Excellent tutor prize – Semester B
2011	Permanent Excellent tutor prize – Semester A Permanent Excellent tutor prize – Semester B
2012	Permanent Excellent tutor prize – Semester A (The Technion does not allow for more than 5 excellent tutor awards)
2013	Wiseman/ Jaknao exceptional TA award
2018	CTC prize-fellowship

## Visiting scientist

- 2016 Hosted by Prof. A. Loeb, CfA (June)  
Hosted by Prof. R. Murray-Clay, UCSB (January)  
2015 Hosted by Prof. S. Portegies Zwart, Leiden University (February)

## Conferences (contributing talks)

- 2019 50<sup>th</sup> annual meeting DDA, Boulder, Colorado, USA  
2017 Planetary systems beyond the main sequence, Technion, Haifa, Israel  
2016 Stellar remnants at the Junction, Junction, TX, USA  
Binary stars in Cambridge, Cambridge, England  
2015 TRENDY, triple systems, Technion, Haifa, Israel  
The impact of massive binaries, Lorentz center, Leiden, Netherlands  
2014 Stellar Tango at the Rockies, Alberta, Canada  
Binary systems, their evolution and environments, Ulan Bator, Mongolia  
2013 GRAVASCO, Institute Henri Poincare, Paris, France

## Seminars

- 2019 Binary-BH mergers in the field, Virginia Tech, VA, USA (Invited)  
2018 Collisional dynamics and Binary-BH mergers, UBG, Israel  
Collisional dynamics and Binary-BH mergers, UMD, USA  
2017 Collisional dynamics in the field, PhD seminar, Technion  
2016 Hot and Warm Jupiters in the Pre-MS phase, UC-Berkeley  
Collisional dynamics in the field, CfA  
Collisional dynamics in the field, University of Columbia  
Collisional dynamics in the field, Princeton  
Collisional dynamics in the field, Caltech  
Low-Mass X-ray binary formation, UCLA (Invited)  
Low-Mass X-ray binary formation, Huji University (Invited)  
2012 Effective noise theory of the none-linear Schrödinger equation with random potential,  
Master seminar, Technion.

## Mentoring

- 2019 Undergraduate project, **Logan Wood, Ben Johnson, Dylan Britt**, UMD  
2017 Undergraduate project, **Dani Lipman**, University of Iowa  
2016 Graduate research project, **Dimitri Ginzburg**, Technion  
2014 Undergraduate project, **Rotem Liss**, Technion

## Academic Service

- Referee Nature  
Astrophysical Journal (Apj) letter  
Apj  
MNRAS

MNRAS letters  
Panelist **ATP 2019 panel (NASA)**  
Reviewer **FINESST 2019 (NASA)**

### **Departmental Activities**

2018-2019 CTC – weekly theory seminar, UMD  
2017 LOC of the Planetary systems beyond the main sequence conference, Technion  
2015 LOC of the TRENDY conference, Technion  
2012-2015 Organizing the weekly journal club, Astrophysics group, Technion

### **Other Noteworthy Activities and Skills**

*Computational skill:* coding in Matlab, Python, fortran, C. Experience with MESA (stellar evolution code), Mercury, ReBound (N-body codes), BSE (population synthesis code).

*Volunteer work:* Regularly lectures in high schools and mid schools on physics, science and mathematics, emphasizing the importance of women in science.

Lectures in the undergraduates science clubs.

Mentoring gifted high-school pupils on celestial dynamics for a high school project.

### **Publications**

#### **Published**

14) 2019 : Constraints on the common-envelope evolution process from wide triple systems.

**Michaely** & Perets. Journal: Monthly Notices of the Royal Astronomical Society, Vol. 484, Issue 4, p. 4711-4717

13) 2018 : The demographics of neutron star-white dwarf mergers. Rates, delay-time distributions, and progenitors. Toonen, Perets, Igoshev, **Michaely**, Zenati. Journal: Astronomy&Astrophysics, Volume 619, A53.

12) 2018 : Supermova and prompt gravitational-wave precursors to LIGO gravitational-wave sources and short-GRBs. **Michaely** & Perets. Journal: The Astrophysical Journal letter, Volume 855, Issue 1, article id. L12, 6 pp (2018)

11) 2017 : On the existence of regular and irregular outer moons orbiting the Pluto-Charon system. **Michaely** et. al. Journal: The Astrophysical Journal, Volume 836, Issue 1, article id. 27, 7 pp (2017)

10) 2017 : Generalized Hill-stability criteria for hierarchical three-body systems at arbitrary inclinations. Grishin, Perets, Zinati and **Michaely**. Journal: Monthly Notices of the Royal Astronomical Society, Vol. 466, Issue 1, p. 276-285

9) 2016 : Tidal capture formation of low-mass X-ray binaries from wide binaries in the field. **Michaely** and Perets. Journal: Monthly Notices of the Royal Astronomical Society, Vol. 458, Issue 4, p. 4188-4197

8) 2014 : Secular dynamics in hierarchical three-body systems with mass loss and mass transfer. **Michaely** & Perets. Journal: The Astrophysical Journal, Volume 792, Issue 2, article id. 122, 12 pp (2014)

7) 2012 : Statistical properties of the one dimensional Anderson model relevant for the nonlinear Schrodinger equation in a random potential. **Michaely** & Fishman. Journal: The European Physical Journal B, Vol. 85, Issue 11, id. 362, 10 pp (2012)

6) 2012 : Effective noise theory for the nonlinear Schrodinger equation with disorder. **Michaely** & Fishman. Journal: Physical Review E, vol. 85, Issue 4, id. 046218 (2012)

### **Submitted**

5) 2019 : Inferred timescales for common envelope ejection using wide astrometric companions. Igoshev, Perets and **Michaely**. (Submitted to MNRAS)

4) 2019 : Gravitational waves sources from mergers of binary black-holes catalyzed by fly-bys interaction in the field. **Michaely** & Perets. arXiv:1902.01864 (Submitted to ApJ letters)

3) 2019 : Solar luminosity bound on mirror matter. **Michaely** et al. arXiv:1905.12643 (Submitted to PRD)

2) 2016 : Shaping of the inner Oort cloud by Planet Nine. **Michaely** and Loeb. arXiv:1609.08614 (Submitted to MNRAS)

1) 2016 : Neutron star natal kick: Collisions,  $\mu$ TSEs, faint SNe, GRBs and GW sources with preceding electromagnetic counterparts. **Michaely** et. al. arXiv:1610.00593 (Submitted to MNRAS)