



THE HEBREW UNIVERSITY OF JERUSALEM
ISRAEL INSTITUTE FOR ADVANCED STUDIES

33rd Winter School in Theoretical Physics on: Exoplanets

28 December 2015 - 8 January 2016

All lectures will take place at the Israel Institute for Advanced Studies, Room 130
on the Edmond J. Safra, Givat Ram Campus

Organizers:

Re'em Sari (The Hebrew University of Jerusalem)

Dave Stevenson (Caltech)

Program

Monday, 28 December

- 09:00 - 10:00 Registration
- 10:00 - 11:30 **Dave Stevenson** (Caltech)
General Introduction - Theory
- 11:30 - 12:00 Coffee Break
- 12:00 - 13:30 **Dave Charbonneau** (Harvard University)
Physics Colloquium: Exoplanets
- 13:30 - 15:00 Lunch at Beit Bretter
- 15:00 - 16:30 **Scott Tremaine** (Institute for Advanced Study,
Princeton)
Celestial Mechanics I
- 16:30 - 17:00 Coffee Break
- 17:00 - 18:30 **Tsevi Mazeh** (Tel Aviv University)
Detection of Planets with Radial Velocities
- 18:30 - 20:30 Reception

Tuesday, 29 December

- 09:00 - 10:30 **Dave Charbonneau** (Harvard University)
Kepler and its Results
- 10:30 - 11:00 Coffee Break
- 11:00 - 12:30 **Ruth Murray-Clay** (University of California at
Santa Barbara)
Disks Observations and Interpretation
- 12:30 - 14:00 Lunch at the Belgium House

- 14:00 - 15:30 **Scott Tremaine** (Institute for Advanced Study,
Princeton)
Celestial Mechanics II
- 15:30 - 16:00 Coffee Break
- 16:00 - 17:30 **Yoram Lithwick** (Northwestern University)
TTV - Theory
- 17:30 - 18:00 Coffee Break
- 18:00 - 19:00 **Tutorial**
- 19:30 - 21:00 Dinner for speakers

Wednesday, 30 December

- 09:00 - 10:30 **Dave Charbonneau** (Harvard University)
Kepler and its Results II
- 10:30 - 11:00 Coffee Break
- 11:00 - 12:30 **Dan Maoz** (Tel Aviv University)
Microlensing - Theory and Observations
- 12:30 - 14:00 Lunch at Beit Bretter
- 14:00 - 16:45 **Old City of Jerusalem**
Tour

Thursday, 31 December

- 09:00 - 10:30 **Scott Tremaine** (Institute for Advanced Study,
Princeton)
Numerical Integrations of Orbits
- 10:30 - 11:00 Coffee Break
- 11:00 - 12:30 **Dave Stevenson** (Caltech)
Giant Planet Gas Accretion

- 12:30 - 14:00 Lunch at Beit Bretter
- 14:00 - 14:45 **Podolak Morris** (Tel-Aviv University)
Accretion of Giant Planets
- 14:45 - 15:30 **Ravit Helled** (Tel-Aviv University)
Alternative Formation Theory and Structure of
Giant Planets
- 15:30 - 16:00 Coffee Break
- 16:00 - 17:30 **Tsevi Mazeh** (Tel Aviv University)
TTV and Stellar Rotation - Observations
- 20:00 - 00:00 End of Year Party at the Science Museum

Friday, 1 January

- 10:00 - 11:30 **Re'em Sari** (The Hebrew University of Jerusalem)
Planet Formation I
- 11:30 - 12:00 Coffee Break
- 12:00 - 13:30 **Scott Tremaine** (Institute for Advanced Study,
Princeton)
Planet Disk Interaction
- 13:30 - 14:30 Poster session

Saturday, 2 January

- 08:30 - 17:45 Tour to Masada and the Dead Sea

Sunday, 3 January

- 09:00 - 10:30 **Dave Charbonneau** (Harvard University)
Observational Challenges & Future of Planet
Detection
- 10:30 - 11:00 Coffee Break

- 11:00 - 12:30 **Adam Showman** (University of Arizona)
Atmospheric Structure - Theory
- 12:30 - 14:00 Lunch at Beit Bretter
- 14:00 - 15:30 **Re'em Sari** (The Hebrew University of Jerusalem)
Planet Formation II
- 15:30 - 16:00 Coffee Break
- 16:00 - 16:45 **Boaz Katz** (Weizmann Institute of Science)
Eccentric Migration
- 16:45 - 17:30 **Hagai Perets** (Technion, Israel Institute of
Technology)
Dynamics in Triple Systems. Kozai and Retrograde
Planets
- 17:30 - 18:00 Coffee Break
- 18:00 - 19:00 **Tutorial**

Monday, 4 January

- 09:00 - 10:30 **Tristan Guillot** (Observatoire de la Cote d'Azur)
Internal Models I
- 10:30 - 11:00 Coffee Break
- 11:00 - 12:30 **Adam Showman** (University of Arizona)
Atmospheric Dynamics
- 12:30 - 14:00 Lunch at Beit Bretter
- 14:00 - 15:30 **Ruth Murray-Clay** (University of California at
Santa Barbara)
Atmospheric Escape from Hot Jupiters and Super
Earths
- 15:30 - 16:00 Coffee Break

- 16:00 - 16:45 **Yohai Kaspi** (Weizmann Institute of Science)
Atmospheric Dynamics - Solar and Extrasolar
- 16:45 - 17:30 **Shay Zucker** (Tel-Aviv University)
Planet Detection with Gaia
- 17:30 - 18:00 Coffee Break
- 18:00 - 19:00 **Tutorial**

Tuesday, 5 January

- 09:00 - 10:30 **Ruth Murray-Clay** (University of California at Santa Barbara)
Planet System Architecture
- 10:30 - 11:00 Coffee Break
- 11:00 - 12:30 **Re'em Sari** (The Hebrew University of Jerusalem)
Inflated Hot Jupiters and Super Earths
- 12:30 - 14:00 Lunch at the Belgium House
- 14:00 - 15:30 **Yoram Lithwick** (Northwestern University)
Planetesimals
- 15:30 - 16:00 Coffee Break
- 16:00 - 17:30 **Giovanna Tinetti** (University College London)
Cosmochemistry and Galactic Context
- 17:30 - 18:00 Coffee Break
- 18:00 - 19:00 **Tutorial**
- 19:30 - 21:00 Dinner for speakers

Wednesday, 6 January

- 09:00 - 10:30 **Tristan Guillot** (Observatoire de la Cote d'Azur)
Internal Models II
- 10:30 - 11:00 Coffee Break
- 11:00 - 12:30 **Adam Showman** (University of Arizona)
Rotation and Tides
- 12:30 - 14:00 Lunch at Beit Bretter
- 15:30 - 22:00 **Tour:**
Visit to 2000 Years Old Hideout Caves + Star
Gazing

Thursday, 7 January

- 09:00 - 10:30 **Yoram Lithwick** (Northwestern University)
Formation of Hot Jupiters
- 10:30 - 11:00 Coffee Break
- 11:00 - 12:30 **Tristan Guillot** (Observatoire de la Cote d'Azur)
Planet Evolution
- 12:30 - 14:00 Lunch at the Belgium House
- 14:00 - 15:30 **Dave Stevenson** (Caltech)
Astro Seismology
- 15:30 - 16:00 Coffee Break
- 16:00 - 17:30 **Giovanna Tinetti** (University College London)
Observations of Atmospheres
- 17:30 - 18:00 Coffee Break
- 18:00 - 19:00 **Tutorial**

Friday, 8 January

09:00 - 10:30 **Giovanna Tinetti** (University College London)

10:30 - 11:00 Coffee Break

11:00 - 12:30 **Dave Stevenson** (Caltech)
Summary & Theoretical Challenges

12:30 - 14:00 **Farewell drinks & Pizza**