



UNIVERSITÀ  
degli STUDI  
di CATANIA

DIPARTIMENTO DI FISICA E ASTRONOMIA

DOTTORATO DI RICERCA IN FISICA

ANNO ACCADEMICO 2017 - 2018

---

## Exoplanets

2 CFU

**Teaching staff:** Isabella Pagano

**Email:** Isabella.pagano@inaf.it

**Office:** INAF – Astrophysical Observatory of Catania

**Telephone:** +39 095 7332243

**Reception hours:** 11-12 a.m. from Monday to Friday by appointment (please send an email to the above address)

---

### Program of the course:

1. **Introduction:** A general view of the field and the key questions
2. **Detection:** The different observations techniques: Radial Velocities, Imaging, Transits, Microlenses, TTV, Astrometry; methods; main facilities; challenges. Results to date
3. **Census of exoplanets:** distribution in mass and size, multiplanetary systems; orbits, eccentricity, rotation
4. **Exoplanet atmospheres:** observation techniques; hot, warm and temperate planets. The concept of habitability, Results to date.
5. **Facilities for exoplanets:** present and future facilities from ground to space.

---

### Bibliography:

- [1] M. Perryman, *The Exoplanet Handbook*, 2014, Cambridge Univ. Press  
[2] C.A Haswell, *Transiting Exoplanets*, 2010, Cambridge Univ. Press  
[3] K. Heng, *Exoplanetary Atmospheres*, 2017, Princeton University Press

Recent research papers will be suggested to cover specific topics of this rapidly evolving field.