



Exoplanets

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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, Timing, Astrometry. Methods; challenges; main facilities. Results to date.
 3. **Census of exoplanets:** distribution in mass and size, multiplanetary systems; orbits, eccentricity, rotation, abundances, planetary formation theories. Host stars.
 4. **Exoplanet atmospheres:** observation techniques; hot, warm and temperate planets. Transmission and emission spectroscopy. Phase curves. The concept of habitability. Results to date.
 5. **Facilities for exoplanets:** present and future facilities from ground to space.
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Bibliography:

- [1] M. Perryman, *The Exoplanet Handbook*, 2018, 2nd edition, 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.