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, Timing, Astrometry. Methods; challenges; Results to date.
3. **Census of exoplanets**: distribution in mass and size, multiplanetary systems; orbits, eccentricity, rotation, abundances. Host stars.
4. **Planetary formation theories**: Terrestrial planet formation, Giant planet formation, Tidal effects, Population synthesis, Orbital migration
5. **Exoplanet atmospheres**: Observation techniques; hot, warm and temperate planets. Transmission and emission spectroscopy. Phase curves. The concept of habitability. Results to date.
6. **Facilities for exoplanets**: Present and future facilities from ground to space.

Bibliography:


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