

Training of observational techniques for atmospheric sciences, planetology and astronomy provided by IPSL in France

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Abstract

Institut Pierre Simon Laplace (IPSL) in France is organising regularly some trainings (twice to six times a year) for students but also sometimes for scholars, in collaboration with Universities, Observatories or Observational Platforms. During courses, participants are operating or participating to operational observations related to atmospheric sciences, planetology and astronomy. The instruments presented include especially:

- Temperature Lidar (measurement of temperature in the middle Earth's atmosphere)
- Wind Lidar (measurements of wind in the middle atmosphere)
- Ozone, aerosol and water vapour Lidar (profiles of constituents from ground level up to 50 km)
- UV visible spectrometers (measurements of total columns of constituents like ozone, water vapour, aerosol, etc...)
- Astronomical telescopes that they can "drive by hand" or drive using controllers (observation of planets, asteroids, nebulae, galaxies, etc...)
- Ozone sonde balloon launch (ozone vertical profile from the ground up to 30 km)

Training is provided on scientific instruments working in real time on scientific projects in the frame of international collaborations like NDACC, in presence of operators available to give information on their contribution and implication. Participants are also able to re-visit the instruments outside observational period in order to see the interior of the instruments and the high technology

needed to realise observations: Fabry-Perot interferometric devices, Raman scattering cell, lasers, optical filters, etc... Some special sessions on computers are dedicated to data-bases, web tools and services to present and to use services provided in the frame of the Astronomical Virtual Observatory, to be extended in near future to the planetary Virtual Observatory and its inter-operability concept.