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# Next Generation Summer School

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On 21.06.2010 the „Next Generation" Summer School has opened the doors for its first students. They were introduced in the astronomy world by astronomical observations, astronomy and radio-astronomy lectures, laboratory projects meant to initiate them into modern radio astronomy and radio communications.
The didactic programme was structure as fallowing:
1) Astronomical elements from the visible spectrum (lectures + practical projects)
2) Radio astronomy elements (lectures + practical projects)
3) Radio communication base (didactic- recreative games)
The students and professors accommodation was at the Agroturistic Pension „Popasul Iancului" situated at 800m from the Marisel Observatory.
First day (summer solstice day) began with a practical activity: determination of the meridian by measurements of the shadow (the direction of one vertical alignment, when it has the smallest length). The experiment is very instructive and interesting because combines notions of physics, spatial geometry and basic astronomy elements.
Next day the activities took place in four stages: the students processed the experimental data obtained on first day (on sheets of millimetre paper they represented the length of the shadow alignments according the time), each team realised its own sun quadrant, point were given considering the design and functionality of these quadrant, the four teams had to mimic important constellations on carton boards with phosphorescent sticky stars and the students, accompanied by the professors took a hiking trip to the surroundings, marking the interest point coordinates, using a GPS to establish the geographical coronations and at the end of the day the students realised a small map of central Marisel area based on the GPS data.
On the third day, the students were introduced to basic notions of radio astronomy, the principal categories of artificial Earth satellites: low orbit satellites (LEO), Medium orbit satellites (MEO) and geostationary satellites (GEO). The lecture was sustained by Physicist Paul Dolea, researcher at BITNET CCSS and PhD in Electronic Engineer and Telecommunications at Technical University from Cluj. There were presented several didactic-demonstrative prototypes of radio transmission of audio and video signals, with directive reception antenna. We benefited from the BITNET firm help which allowed the students to visit the equipments for C and Ku bands reception, with 4m diameter parabolic antenna and 14 tones foundation. The students were also presented the S band communication equipment with low altitude artificial satellites. The parabolic antenna with 3m in diameter is able to detect everywhere on the sky the extremely fast satellites situated at thousands of kilometres distance, which „are crossing" the sky in only several minutes. Most of the students climbed the platform under the cupola designated to the astronomical observations in visible spectrum and took pictures.
The following days were lectured on topics of theoretical astronomy and astrophysics and during the nights were made astronomical observations.
All the students received diplomas to certify their participation to the first "Next Generation" Summer School. This summer school will be organised from now on every summer, in Marisel area from Cluj. Since then the summer school has been held each year.