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Spectral researches of solar system giant planets using 2-m telescope at the Peak Terskol

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Abstract. Results of observations, processing and an analysis of Uranus and Neptune spectra obtained from 2001-2012 are presented. Observations were carried out at the peak Terskol observatory (Northern Caucasus, Russia) using the coude échelle high-resolution spectrograph and the 2-meter mirror telescope Zeiss-2000. Data were obtained with spectral resolution R=45000 within 3700 - 9000 Ångstroms range.

Combination of the specified equipment and spectral resolution allowed to solve the following problems: detecting of contribution of Raman scattering in planet spectra; calculating of spectral geometric albedo A_g taking into account of Raman scattering; research of long- and short-periodic variations for A_g and intensities of some chosen spectral lines; calculations of vertical structure parameters of giant planet atmospheres; search of ammonia NH_3 lines in planet spectra. A comparative analysis of Uranus and Neptune spectra for different years was done.