High resolution monitoring of 9P/Tempel 1 at La Palma during the flyby of DEEP IMPACT

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On July 4, 2005 the NASA spacecraft Deep Impact delivered an impactor on the comet 9P/Tempel 1, to study the material underneath the surface of the nucleus. A world-wide observation campaign accompanied the mission, to characterize the activity of Tempel 1 before and after the impact. At La Palma (Canary Islands), the comet was observed from July 2 to July 9 using the echelle spectrograph SARG on the Telescopio Nazionale Galileo (TNG). The spectra have been obtained using a slit 8. arcsec long, providing a resolving power R=29000 in the spectral range 4620-7920 Å. Most of the lines found in the spectra can be attributed to C2, NH2 and CN; the atomic oxygen lines, both the green line at 5577 Å and the red doublet at 6300 and 6364 Å are clearly visible in every spectrum. All these emission lines have been catalogued and identified, using as a comparison list the catalogue obtained from a spectrum of 153P/2002 Ikeya-Zhang, taken on April 20, 2002 [1], [2]. One of our aims is also to compare between them these spectra, looking for differences in the lines visible in the orders before and after the impact.

References: [1] Cremonese G. et al. (2006) A&A, in press. [2] Capria M.T. et al. (2005) A&A, 442, 1121-1126