



High resolution observation of comets

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We are performing a long term program of high resolution observation of active comets in the visible range of the electromagnetic spectrum. The comets are observed at the Telescopio Nazionale Galileo, in La Palma, with the cross-dispersed echelle spectrograph SARG. We have observed until now many comets, including 9P/Tempel 1 during the impact event (Deep Impact NASA mission) and 17P/ Holmes in the priod of the extraordinary outburst (October-December 2007). The next comet that will be observed is 67P/ Churyumov-Gerasimenko, target of the Rosetta mission.

Analyzing and comparing between them the spectra obtained in this way we hope to identify the many unidentified emission lines that are present in this part of the spectra. We have also been able to obtain the atomic oxygen lines ratio for some of these comets. The analysis of these lines and of their ratio can give a hint on the species that is the main responsible for their origin. We are presenting here an update on our studies.