

Spatial Variations of Atomic Species in the Coma as Observed by *Rosetta*'s Alice UV Spectrograph during Great Circle Scans

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Rosetta's Alice far-UV imaging spectrograph (700-2050 Å) performed a sequence of observations every few weeks from January 2015 through May 2016 to survey the coma away from the nucleus. These "Great Circles" consisted of a series of slews along a celestial great circle passing through the nucleus (e.g., covering off-nadir angles from approximately 0-180°) with pauses for observations by Alice and other instruments. We report here on Alice observations acquired during these Great Circle scans that allow us to investigate the spatial distributions of O, S, and C emissions. Deviations from a standard Haser model, adapted for use from within the coma, are seen and suggest non-resonant scattering processes, such as electron impact, are important at some off-nadir angles, with the extent of this effect evolving during the mission. Other effects under consideration include the effects of extended sources, optical saturation effects, interaction with the solar wind, and short-term variations (diurnal brightness, jets) along the line of sight. These analyses suggest that the most accurate relative abundances likely come from the lines of sight farthest from the nucleus.