Laboratory Spectroscopy and Space Astrophysics: A Tribute to Joe Reader and Friends

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Beginning with the launch of the Copernicus Satellite in 1973, and continuing with the International Ultraviolet Explorer (IUE), and the state-of-the-art spectrographs on the Hubble Space Telescope (GHRS, FOS, STIS and COS), astrophysics has experienced dramatic advancements in capabilities to study the composition and physical properties of planets, comets, stars, nebulae, the interstellar medium, galaxies, quasars and the intergalactic medium at visible and ultraviolet wavelengths. It became clear almost immediately that the available atomic data needed to calibrate and quantitatively analyze these superb spectroscopic observations, obtained at great cost from space observatories, was not up to that task. Over the past 3+ decades, Joe Reader and his collaborators at NIST have provided, essentially "on demand", laboratory observations and analyses of extraordinary quality to help astrophysicists extract the maximum possible physical understanding of objects in the cosmos from their space observations. This talk is a one scientist's grateful retrospective about these invaluable collaborations.