

Abstract Submitted
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Xray to far infrared spectrum of phosphorus for astrophysical modeling¹ SULTANA NAHAR, B. SHAFIQUE, M. ROTHMAN, R. NAGHMA, Ohio State Univ - Columbus — Phosphorus exists in DNA, RNA and is a basic element of life. It is abundant in the solar system. However, its presence in space has been undetectable until recently. Due to its lack of existence in astrophysical spectra the study has been limited. With the discoveries of the exoplanets the need for searching bio-signature elements, particularly phosphorus has increased significantly in order to find a clue for life. JWST is expected to obtain high resolution infrared spectra of exoplanets. We will report the wavelength regions of interest for searching the phosphorus lines and predict a spectrum ranging from x-ray to far infrared region produced by all ionization stages of phosphorus. These can help astrophysical modeling for diagnostics, abundances and determining the physical condition.

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