

**Bulletin of the American Physical Society****Fall 2021 Meeting of the Eastern Great Lakes Section**  
Friday–Saturday, November 12–13, 2021; Virtual; Eastern Time**Session J01: Oral Session 1**

10:15 AM–12:00 PM, Saturday, November 13, 2021

Chair: Niklas Manz, College of Wooster

**Abstract: J01.00005 : Modelling PII Emission to Aid in the Search for Life\***

11:15 AM–11:30 AM

[Preview Abstract](#)[← Abstract →](#)**Authors:**Kevin Hoy  
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Being the "backbone" element of DNA, Phosphorus is a key element in the search for life in the Universe. To aid in future search for Phosphorus in star-forming regions and thereby in exoplanets, we have constructed a line ratios emission model for PII. This low ionization state is likely to exist in gaseous nebulae with stellar formation and in exoplanetary atmospheres if those atmospheres contain any significant amount of P. There are also 3 primary lines in PII emission spectrum at 20, 30, and 60  $\mu\text{m}$  that may be detected in the Far Infra-Red. These two facts make this specific ion especially useful in the search for DNA-based life in the universe.

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