OBSERVATIONS OF CIRCUMSTELLAR THERMOCHEMICAL EQUILIBRIUM: THE CASE OF PHOSPHORUS
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We will present observations of phosphorus-bearing species in circumstellar envelopes, including carbon- and oxygen-rich shells\textsuperscript{1}. New models of thermochemical equilibrium chemistry have been developed to interpret, and constrained by these data. These calculations will also be presented and compared to the numerous P-bearing species already observed in evolved stars\textsuperscript{1,2,3,4,5}. Predictions for other viable species will be made for observations with Herschel and ALMA.