

Deep search for phosphorus in low-mass protostars

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Phosphorus plays a crucial role on Earth, but its interstellar journey, from its initial carriers to its release in star forming regions, is poorly known due to the lack of detections. Nevertheless, existing observations of phosphorus-bearing molecules in the interstellar medium reveal two important insights: first, this element is mostly detected toward shock regions, and second, its observed abundance is systematically lower than what we expect. These observations highlight the need for more detections to constrain physico-chemical conditions necessary for phosphorus chemistry and to understand the origin of this depletion. In this work, we use interferometric data providing high angular resolution that enables to map the phosphorus spatial distribution. We present a deep interferometric search targeting phosphorus-bearing molecules in young low-mass protostars.