

Abstract Submitted  
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**Formation of triplet positron-helium bound state by stripping of positronium atoms in collision with ground state helium** JOSEPH DI RIENZI, College of Notre Dame of Maryland, RICHARD J. DRACHMAN, NASA/Goddard Space Flight Center — The system consisting of a positron and a helium atom in the triplet state  $e^+He(^3S^e)$  was conjectured long ago to be stable [1]. Its stability has recently been established rigorously [2], and the values of the energies of dissociation into the ground states of Ps and  $He^+$  have also been reported [3] and [4]. We have evaluated the cross-section for this system formed by radiative attachment of a positron in triplet He state and found it to be small [5]. The mechanism of production suggested here should result in a larger cross-section (of atomic size) which we are determining using the Born approximation with simplified initial and final wave functions. [1] R. J. Drachman, Y. K. Ho, and S. K. Houston, J. Phys B **9**, L199 (1976) [2] G.G. Ryzhikh and J. Mitroy, J. Phys. B **31** 3465 (1998) [3] A. M. Frolov, Phys. Rev. A. **71** 032506 (2005) [4] J. Mitroy, Phys. Rev. A. **72** 032503 (2005) [5] J. Di Rienzi and R. J. Drachman, Phys. Rev A **73**, 012703 (2006)

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