

Abstract Submitted
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Development of a position sensitive detector for Rydberg atom experiments¹ MELINA FUENTES-GARCIA, ADRIC JONES, JEREMY MOXOM, DANIEL ADAMS, GABRIEL CECCHINI, HARRIS RUTBECK-GOLDMAN, KEVIN OSORNO, ROD GREAVES, HARRY TOM, ALLEN MILLS, Univ of California - Riverside — Since their invention, resistive anodes have played an important role in the imaging systems of many experiments. They are commonly used in conjunction with micro-channel plate detectors, which can greatly enhance the positional sensitivity. It is well known that the use of a square anode results in significant distortion in the positional mapping, which can be resolved by careful shaping of the anode. Here we utilize a square anode and correct the position data in post-analysis. We describe the development of such a paired system for use in our positronium (Ps) beam line, designed specifically for the detection of Rydberg Ps atoms. The first experimental results obtained with the detector demonstrated the focusing of a beam of Rydberg Ps by means of an electrostatic mirror. By employing a larger scale version of this apparatus, it should be possible to measure the gravitational deflection of Rydberg Ps atoms in Earth's field to high precision.

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