

Abstract Submitted
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Bose-Einstein condensation of ^{84}Sr Y. NATALI MARTINEZ DE ESCOBAR, B.J. DESALVO, P.G. MICKELSON, M. YAN, T.C. KILLIAN, Rice University — We observe Bose-Einstein condensation (BEC) in the alkaline-earth metal atom strontium (Sr). Bosonic ^{84}Sr possesses ideal collisional properties for efficient evaporative cooling to quantum degeneracy despite not being the isotope of choice due to its unfavorably low natural abundance (0.6%). This newly condensed element offers novel experimental possibilities, such as using an optical Feshbach resonance to tune atom-atom interactions with relatively low atomic losses. Equally exciting theoretical proposals use quantum fluids made of alkaline-earth atoms to create exotic quantum magnetism states and demonstrate quantum computation in optical lattices.

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