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A Compact Optical Atomic Clock Based on a Two-Photon Transition in Rubidium BENJAMIN STUHL, Space Dynamics Laboratory, Logan, UT 94341, KYLE MARTIN, ATA, Albuquerque, NM 87123, GRETCHEN PHELPS, NATHAN LEMKE, AFRL Space Vehicles Directorate, Kirtland AFB, NM 87117 — We present an optical rubidium atomic frequency standard (O-RAFS), based upon a two-photon transition at 778 nm, that utilized readily available commercial off-the-shelf components. Compared to existing GPS clocks, O-RAFS offers reduced short-term instability, improved manufacturability, and competitive size, weight, and power, making it an attractive candidate for future space operation.

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