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Ex Vacuo Atom Chips BENJAMIN STUHL, Space Dynamics Laboratory, Utah State University Research Foundation, MATTHEW SQUIRES, SPENCER OLSON, BRIAN KASCH, Air Force Research Laboratory, Space Vehicles Directorate, RUDY KOHN, Space Dynamics Laboratory, Utah State University Research Foundation, CHRISTOPHER ERICKSON, JONATHON CROW, EVAN CARLSON, Air Force Research Laboratory, Space Vehicles Directorate, JAMES STICKNEY, Space Dynamics Laboratory, Utah State University Research Foundation, JOHN BURKE, Air Force Research Laboratory, Space Vehicles Directorate
— We report on recent progress in our group's development of direct-bonded copper atom chip technology. These chips, in conjunction with a custom thin-walled vacuum chamber, allow the production of deep magnetic traps and degenerate Bose gases while keeping the atom chip itself outside of the vacuum envelope. This enables rapid testing of novel chip designs without disturbing either the vacuum quality or the optical alignment of the larger system.

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