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The Consortium for Ultra Cold Atoms in Space.

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Starting in the mid 1990s NASA began supporting the scientific community's interest in experimental research with cold atoms in Space. In its early phases, this Fundamental Physics program included development of precision experimental tools to enable space-based research using atomic clocks, searches for the permanent dipole moment of the electron, and a space-based system for creating and investigating Bose-Einstein condensates. Following the release in 2011 of the NRC decadal report "Recapturing a Future for Space Exploration," NASA's effort to support the goal of experimental cold atom research in space, and specifically aboard the International Space Station (ISS), accelerated rapidly. One result of this accelerated effort was the installation of the Cold Atom Laboratory (CAL) aboard the ISS. In 2018 space-based Bose-Einstein condensates were successfully created using CAL. In the second half of 2018, investigator driven experiments using the Cold Atom Laboratory (CAL) began. In this talk I will review some of this history and its motivation and I will present recent experimental cold atom data created using CAL aboard ISS.