

Abstract Submitted
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Evidence of New Features in the c-axis Optical Conductivity of URu₂Si₂ JESSE HALL, McMaster University, TOOMAS RÕÕM, TAANIEL ULEKSIN, URMAS NAGEL, Estonian National Institute for Chemical Physics and Biophysics, TRAVIS WILLIAMS, GRAEME LUKE, TOM TIMUSK, McMaster University — The hidden order state of URu₂Si₂ remains mysterious despite many years of investigation. High quality, low noise optical data on both cleaved and cut-and-polished faces with in-plane c-axis of the tetragonal structure offer new insight into the electronic behavior at the ordering temperature. As the gap opens in the density of states, a new mode appears in the gap region that is visible in the conductivity only when reflectance is measured with light polarized along the crystal c-direction. A marked anisotropy in the gap energy seen in the optical conductivity between a-axis and c-axis provides further insight into the structure and magnitude of the energy gap and the behavior of the electrons near the greatly-reduced Fermi surface.

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