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Topological crystalline Kondo insulators and universal topological surface states of SmB_6 MENGXING YE, J.W. ALLEN, KAI SUN, Univ of Michigan - Ann Arbor — We prove theoretically that certain strongly correlated Kondo insulators are topological crystalline insulators with nontrivial topology protected by crystal symmetries. In particular, we find that SmB_6 is such a material. In addition to a nontrivial Z_2 topological index protected by time reversal symmetry, SmB_6 also has nontrival mirror Chern numbers protected by mirror symmetries. On the (100) surface of SmB_6, the nontrivial mirror Chern numbers do not generate additional surface states beyond those predicted by the Z_2 topological index. However, on the (110) surface, two more surface Dirac points are predicted. Remarkably, we find that for SmB_6 both the Z_2 topological index and the mirror Chern numbers are independent of microscopic details, which enable us to obtain surface state properties that are universal.

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