

Abstract Submitted
for the APR16 Meeting of
The American Physical Society

Fundamental Constants as Monitors of Particle Physics and Dark Energy RODGER THOMPSON, Steward Observatory and Department of Astronomy, University of Arizona — This contribution considers the constraints on particle physics and dark energy parameter space imposed by the astronomical observational constraints on the variation of the proton to electron mass ratio μ and the fine structure constant α . These constraints impose limits on the temporal variation of these parameters on a time scale greater than half the age of the universe, a time scale inaccessible by laboratory facilities such as the Large Hadron Collider. The limits on the variance of μ and α constrain combinations of the QCD Scale, the Higgs VEV and the Yukawa coupling on the particle physics side and a combination of the temporal variation of rolling scalar field and its coupling to the constants on the dark energy side.

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Date submitted: 07 Jan 2016

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