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Structure of ^{10}N JOSHUA HOOKER, GRIGORY ROGACHEV, VLADILEN GOLDBERG, EVGENY KOSHCHIY, BRIAN ROEDER, HESHANI JAYATISSA, CURTIS HUNT, CORDERO MAGANA, SRITEJA UPADHYAYULA, ETHAN UBERSEDER, ANTTI SAASTAMOINEN, Texas AM University — We report on the first observation of the ground and first excited states in ^{10}N via ^{9}C+p resonance scattering. The experiment was carried out at the Cyclotron Institute at Texas A&M University. Both states were determined to be $\ell = 0$. We can now reliably place the location of the $2s_{1/2}$ shell in ^{10}N at 2.3 ± 0.2 MeV above the proton decay threshold. Using mirror symmetry and correcting for Thomas-Ehrman shift we argue that the ground state of ^{10}Li is an $\ell = 0$ states that should be very close to the neutron threshold.

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