1154-VS-978 **Caleb Ji**, caleb.ji@wustl.edu, **Joshua Kazdan***, jkazdan@stanford.edu, and **Vaughan McDonald**, vmcdonald@college.harvard.edu. *Patterns of Primes in the Intersection of Beatty and Chebotarev Sets.*

We study the prime numbers that lie in Beatty sequences of the form $\lfloor \alpha n + \beta \rfloor$ and have prescribed algebraic splitting conditions. We prove that the density of primes in both a fixed Beatty sequence with α of finite type and a Chebotarev class of some Galois extension is precisely the product of the densities $\alpha^{-1} \cdot \frac{|C|}{|G|}$. Moreover, we show that the primes in the intersection of these sets satisfy a Bombieri–Vinogradov type theorem. This allows us to prove the existence of bounded gaps for such primes. As a final application, we prove a common generalization of the aforementioned bounded gaps result and the Green–Tao theorem. (Received September 12, 2019)