Invited Speaker, Room N-615
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# Primary units and a proof of Catalan's conjecture

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**Abstract.** Catalan's conjecture states that the equation $x^p - y^q = 1$ has no other integer solutions but $3^2 - 2^3 = 1$. Based on a classic result of Cassels and our recent consequence, that $p, q$ must verify a *double Wieferich condition* if the equation has integer solutions for odd $p, q$, we show that the existence of such a solution produces an excess of $q$ – primary cyclotomic units. This fact leads to a contradiction which proves Catalan's conjecture.