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A very nice type 2 spectrum.

Finite 2-local complex with 192 periodic v_2-self-map were known to exist, e.g. $M(1,4)$ and A_1, which leads to the question whether there exist 2-local finite complex with v_2-periodicity less than 192. In a joint work with P.Egger we answer this question by producing a finite 2-local spectrum Z which admits a 6-periodic v_2-self-map. The spectrum Z has some special properties, among which the most notable one is, $tmf \wedge Z \simeq k(2)$. We also give a complete calculation of the homotopy groups of its $K(2)$-localization. Moreover, because of the property mentioned above, the v_2-periodic part of E_2-page of tmf-based Adams spectral sequence can be computed as well, thereby providing a new gadget to attack the Telescope Conjecture at height 2 prime 2. Time permitting, we will discuss possible future applications that the spectrum Z may have. (Received November 11, 2016)