

***** **Mathematical Weekly** *****
(week seventeen)

More about Squares

$$175^2 = 1^2 + 2^2 + 3^2 + 4^2 + 5^2 + 8^2 + 9^2 + 14^2 + 16^2 + 18^2 + 20^2 + 29^2 + 30^2 \\ + 31^2 + 33^2 + 35^2 + 38^2 + 39^2 + 43^2 + 51^2 + 55^2 + 56^2 + 64^2 + 81^2$$

$$1015^2 = 2^2 + 18^2 + 22^2 + 37^2 + 38^2 + 39^2 + 41^2 + 43^2 + 49^2 + 67^2 + 72^2 \\ + 80^2 + 85^2 + 103^2 + 116^2 + 154^2 + 164^2 + 175^2 + 178^2 + 192^2 \\ + 200^2 + 207^2 + 215^2 + 222^2 + 230^2 + 247^2 + 422^2 + 593^2$$

$$1015^2 = 13^2 + 16^2 + 17^2 + 23^2 + 30^2 + 43^2 + 47^2 + 84^2 + 92^2 + 93^2 + 119^2 \\ + 120^2 + 142^2 + 163^2 + 165^2 + 167^2 + 177^2 + 183^2 + 188^2 + 199^2 \\ + 215^2 + 219^2 + 261^2 + 270^2 + 280^2 + 363^2 + 372^2 + 382^2$$

$$4920^2 = 47^2 + 82^2 + 104^2 + 108^2 + 120^2 + 164^2 + 173^2 + 199^2 + 217^2 + 224^2 \\ + 240^2 + 256^2 + 281^2 + 287^2 + 310^2 + 420^2 + 454^2 + 527^2 + 534^2 \\ + 584^2 + 615^2 + 627^2 + 692^2 + 694^2 + 758^2 + 840^2 + 893^2 + 900^2 \\ + 922^2 + 984^2 + 1026^2 + 1092^2 + 1130^2 + 1177^2 + 1348^2 + 1440^2 \\ + 1587^2 + 2132^2$$

Perhaps you can find an even bigger square that equals a long sum of smaller squares just like these ... if so, let me know!