Conjecture which states that any Carmichael number can be written in a certain way

Abstract. In this paper we conjecture that any Carmichael number C can be written as C = (p + 270)*(n + 1) – n, where n non-null positive integer and p prime. Incidentally, verifying this conjecture, we found results that encouraged us to issue yet another conjecture, i.e. that there exist an infinity of Poulet numbers P2 that could be written as (P1 + n)/(n + 1) – 270, where n is non-null positive integer and P1 is also a Poulet number.

Conjecture:

In this paper we conjecture that any Carmichael number C can be written as C = (p + 270)*(n + 1) – n, where n non-null positive integer and p prime.

Verifying the conjecture:
(for the first eight Carmichael numbers)

: 561 = (11 + 270)*2 – 1, so [n, p] = [1, 11];

: 1105 = (283 + 270)*2 – 1, so [n, p] = [1, 283]; also 1105 = (7 + 270)*4 – 3, so [n, p] = [3, 7];

: 1729 = (307 + 270)*3 – 2, so [n, p] = [2, 307]; also 1729 = (163 + 270)*4 – 3, so [n, p] = [3, 163]; also 1729 = (19 + 270)*6 – 5, so [n, p] = [5, 19];

: 2465 = (347 + 270)*4 – 3, so [n, p] = [3, 347]; also 2465 = (83 + 270)*7 – 6, so [n, p] = [6, 83];

: 2821 = (941 + 270)*3 – 2, so [n, p] = [2, 941]; also 2821 = (13 + 270)*10 – 9, so [n, p] = [9, 13];

: 6601 = (1931 + 270)*3 – 2, so [n, p] = [2, 1931]; also 6601 = (1381 + 270)*4 – 3, so [n, p] = [3, 1381]; also 6601 = (1051 + 270)*5 – 4, so [n, p] = [4, 1051]; also 6601 = (331 + 270)*11 – 10, so [n, p] = [10, 331]; also 6601 = (281 + 270)*12 – 11, so [n, p] = [11, 281];

: 8911 = (541 + 270)*11 – 10, so [n, p] = [10, 541]; also 8911 = (61 + 270)*27 – 26, so [n, p] = [26, 61];

: 10585 = (5023 + 270)*2 – 1, so [n, p] = [1, 5023]; also 10585 = (3529 + 270)*3 – 2, so [n, p] = [2, 3529]; also 10585 = (2377 + 270)*4 – 3, so [n, p] = [3, 2377]; also 10585 = (907 + 270)*9 – 8, so [n, p] = [8, 907]; also

10585 = (613 + 270)*12 – 11, so [n, p] = [11, 613]; also
10585 = (487 + 270)*14 – 13, so [n, p] = [13, 487]; also
10585 = (109 + 270)*28 – 27, so [n, p] = [27, 109];

Note:

We have not verified, but it would be interesting if the number 1729 would be the first number that could be written as C = (p + 270)*(n + 1) – n, where n non-null positive integer and p prime, in three distinct ways, or if the number 6601 would be the first number that could be written such this in five distinct ways, or if the number 10585 would be the first number that could be written such this in seven distinct ways, or if the first number that could be written such this in k different ways would be a Carmichael number.

Conjecture:

There exist an infinity of Poulet numbers P2 that could be written as (P1 + n)/(n + 1) – 270, where n is non-null positive integer and P1 is also a Poulet number.

Example:

: 2701 = (8911 + 2)/3 - 270, so [n, P1, P2] = [2, 8911, 2701].