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FIRST ANALYSIS OF THE 30 BIMAGIC SERIES GIVING A MAXIMUM OF BIMAGIC SQUARES (SQ)

ABSTRACT

Walter Trump showed that the SQ distribution according to the row64 index was made of two different parts:

- most of the indexes (among the 3789 possible bimagic series with 64 inside) give a maximum of 157 bimagic squares
- but 30 indexes give a high number of solutions, between 854 and 1356.

I analyzed the 30 bimagic series giving these numerous solutions.

LIST OF THE 30 BIMAGIC SERIES

Row64 index	Bimagic series
1005	64-49-42 39-27-22-13-04
1011	64-49-43-38-26-23-13-04
1028	64-50-41-39-27-21-14-04
1030	64-50-43-37-25-23-14-04
1051	64-51-41-38-26-21-15-04
1056	64-51-42-37-25-22-15-04
1686	64-49-42-39-29-20-11-06
1701	64-49-45-36-26-23-11-06
1732	64-50-41-39-29-19-12-06
1738	64-50-45-35-25-23-12-06
1825	64-53-41-36-26-19-15-06
1833	64-53-42-35-25-20-15-06
2005	64-49-43-38-29-20-10-07
2010	64-49-45-36-27-22-10-07
2063	64-51-41-38-29-18-12-07
2079	64-51-45-34-25-22-12-07
2138	64-53-41-36-27-18-14-07
2145	64-53-43-34-25-20-14-07
2331	64-50-43-37-29-19-10-08
2334	64-50-45-35-27-21-10-08
2358	64-51-42-37-29-18-11-08
2372	64-51-45-34-26-21-11-08
2443	64-53-42-35-27-18-13-08
2449	64-53-43-34-26-19-13-08
3165	64-57-37-36-22-19-15-10
3169	64-57-38-35-21-20-15-10
3354	64-57-37-36-23-18-14-11
3363	64-57-39-34-21-20-14-11
3478	64-57-38-35-23-18-13-12
3483	64-57-39-34-22-19-13-12

ANALYSIS

The 30 solutions are made of 15 successive pairs, having the same 1st, 2nd, 7th, 8th numbers:
1005 and 1011, 1028 and 1030, ..., 3478 and 3483

If we look at the 4 first numbers, we have also 15 other pairs of solutions:
1005 and 1686, 1011 and 2005, ..., 3363 and 3483.

If we look at the 1st, 2nd, 5th, 6th numbers, we have still 15 other pairs of solutions:
1005 and 2010, 1011 and 1701, ..., 3165 and 3483

In fact, we have 5 sets of 6 series which are going together with the same structure:

1005, 1011, 1686, 1701, 2005, 2010
1028, 1030, 1732, 1738, 2331, 2334
1051, 1056, 2063, 2079, 2358, 2372
1825, 1833, 2138, 2145, 2443, 2449
3165, 3169, 3354, 3363, 3478, 3483

1005 -----1686 1011 -----2005 2010-----1701	or	1005-----2010 1011-----1701 1686-----2005
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1028 -----1732 1030 -----2331 2334-----1738	or	1028-----2334 1030-----1738 1732-----2331
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1051 -----2063 1056 -----2358 2372-----2079	or	1051-----2372 1056-----2079 2063-----2358
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1825 -----2138 1833 -----2443 2449-----2145	or	1825-----2449 1833-----2145 2138-----2443
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3165 -----3354 3169 -----3478 3483-----3363	or	3165-----3483 3169-----3363 3354-----3478
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The 240 numbers inside the 30 series are distributed in the following way:
the number 64 appears 30 times
each of the 35 other numbers (57, 53,...,4) appears 6 times.

There are truly a lot of symmetries on the 30 bimagic series.

NEW ANALYSIS AND CONCLUSION

In fact, these 30 bimagic series were after identified as the series with 64 inside among the 240 “immutable series” of Dwane Campbell. These immutable series are so far the best answer for explaining the “hot spot” question, i.e. for explaining why 30 particular series give a large number of solutions.