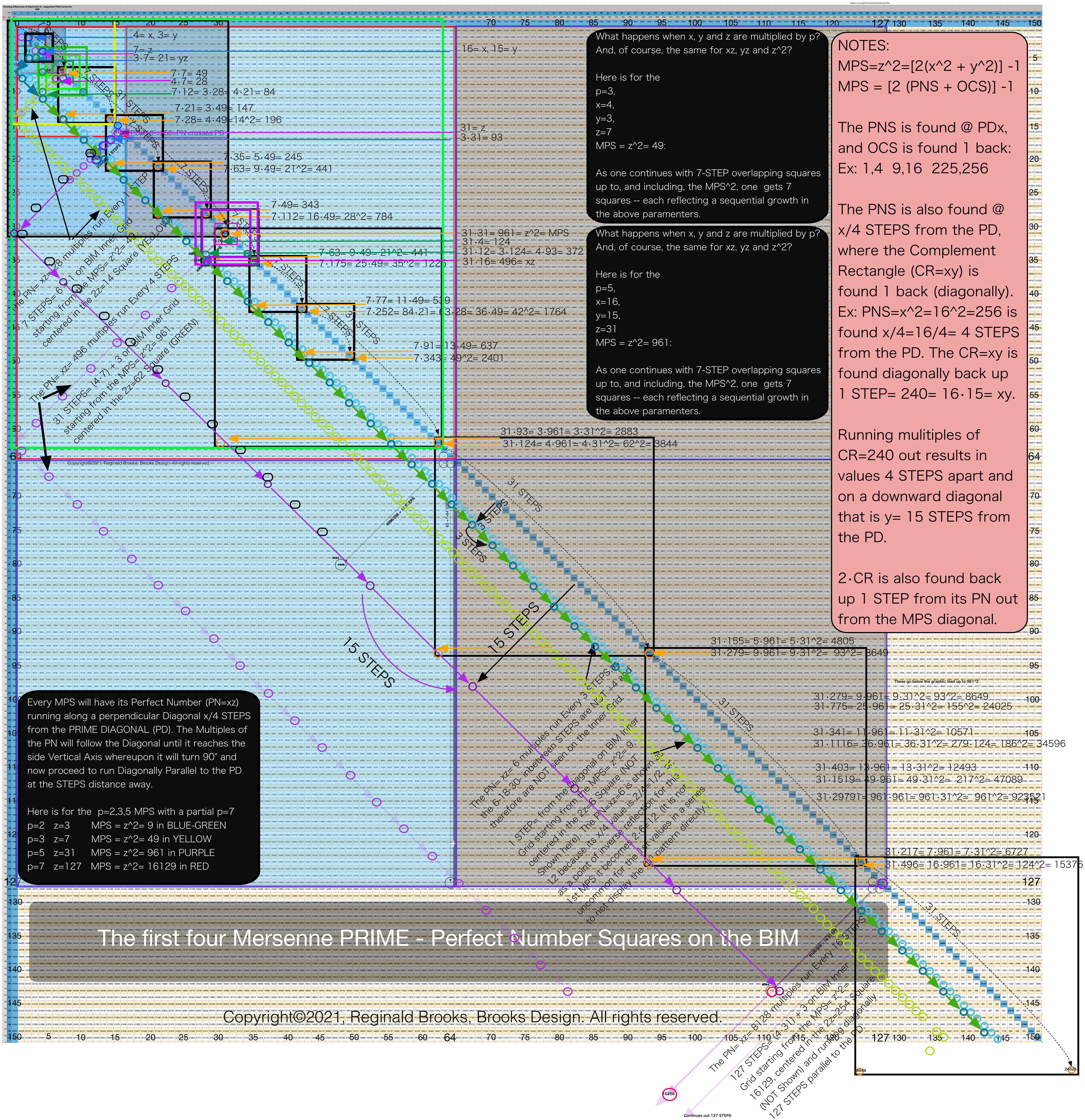
The first four Mersenne PRIME - Perfect Number Squares on the BIM
NOTES:
MPS=z^2=[2(x^2 + y^2)] -1
MPS = [2 (PNS + OCS)] -1
The PNS is found @ PDx, and OCS is found 1 back: Ex: 1,4 9,16 225,256
The PNS is also found @ x/4 STEPS from the PD, where the Complement Rectangle (CR=xy) is found 1 back (diagonally). Ex: PNS=x^2=16^2=256 is found x/4=16/4= 4 STEPS from the PD. The CR=xy is found diagonally back up 1 STEP= 240= 16·15= xy.
Running mulitiples of CR=240 out results in values 4 STEPS apart and on a downward diagonal that is y= 15 STEPS from the PD.
2·CR is also found back up 1 STEP from its PN out from the MPS diagonal.
What happens when x, y and z are multiplied by p? And, of course, the same for xz, yz and z^2?
Here is for the p=3, x=4, y=3, z=7 MPS = z^2= 49:
As one continues with 7-STEP overlapping squares up to, and including, the MPS^2, one gets 7 squares -- each reflecting a sequential growth in the above paramenters.
What happens when x, y and z are multiplied by p? And, of course, the same for xz, yz and z^2?
Here is for the p=5, x=16, y=15, z=31 MPS = z^2= 961:
As one continues with 7-STEP overlapping squares up to, and including, the MPS^2, one gets 7 squares -- each reflecting a sequential growth in the above paramenters.
Every MPS will have its Perfect Number (PN=xz) running along a perpendicular Diagonal x/4 STEPS from the PRIME DIAGONAL (PD). The Multiples of the PN will follow the Diagonal until it reaches the side Vertical Axis whereupon it will turn 90° and now proceed to run Diagonally Parallel to the PD at the STEPS distance away.
Here is for the p=2,3,5 MPS with a partial p=7
p=2 z=3 MPS = z^2= 9 in BLUE-GREEN
p=3 z=7 MPS = z^2= 49 in YELLOW
p=5 z=31 MPS = z^2= 961 in PURPLE
p=7 z=127 MPS = z^2= 16129 in RED
4= x, 3= y
7= z
3·7= 21= yz
7·7= 49
4·7= 28
7·12= 3·28= 4·21= 84
7·21= 3·49= 147
7·28= 4·49=14^2= 196
7·35= 5·49= 245
7·63= 9·49= 21^2= 441
7·49= 343
7·112= 16·49= 28^2= 784
7·63= 9·49= 21^2= 441
7·175= 25·49= 35^2= 1225
7·77= 11·49= 539
7·252= 84·21= 63·28= 36·49= 42^2= 1764
7·91= 13·49= 637
7·343= 49^2= 2401
16= x, 15= y
31= z
3·31= 93
31·31= 961= z^2= MPS
31·4= 124
31·12= 3·124= 4·93= 372
31·16= 496= xz
31·93= 3·961= 3·31^2= 2883
31·124= 4·961= 4·31^2= 62^2= 3844
31·155= 5·961= 5·31^2= 4805
31·279= 9·961= 9·31^2= 93^2= 8649
31·279= 9·961= 9·31^2= 93^2= 8649
31·775= 25·961= 25·31^2= 155^2= 24025
31·341= 11·961= 11·31^2= 10571
31·1116= 36·961= 36·31^2= 279·124= 186^2= 34596
31·403= 13·961= 13·31^2= 12493
31·1519= 49·961= 49·31^2= 217^2= 47089
31·29791= 961·961= 961·31^2= 961^2= 923521
31·217= 7·961= 7·31^2= 6727
31·496= 16·961= 16·31^2= 124^2= 15376
7 STEPS
3 STEPS
15 STEPS
31 STEPS
The PN= xz= 28 multiples run Every 1 STEP 7 STEPS= 6+1 on BIM Inner Grid starting from the MPS= z^2= 49 centered in the 2z= 14 Square (YELLOW)
The PN= xz= 496 multiples run Every 4 STEPS 31 STEPS= (4·7) + 3 on BIM Inner Grid starting from the MPS= z^2= 961, centered in the 2z= 62 Square (GREEN)
The PN= xz= 6 multiples run Every 3 STEPS are NOT -4 and the 6-18-30- inbetween STEPS are NOT seen on the Inner Grid therefore are NOT seen on the BIM Inner 1 STEP= from the Diagonal on BIM Inner Grid starting from the MPS= z^2= 9, centered in the 2z= 6 Square (NOT Shown here). The PN=xz=6 is shown here 12 because its x/4 value is 2/4=1/2, as a point of inverse reflection for this 1st MPS it becomes 2-6-12. (It is not uncommon for the 1st values in a series to not display the full pattern directly.)
The PN= xz= 8128 multiples run Every 16 STEPS 127 STEPS= (4·31) + 3 on BIM Inner Grid starting from the MPS= z^2= 16129, centered in the 2z= 254 Square (NOT Shown) and running diagonally 127 STEPS parallel to the PD.
Continues out 127 STEPS
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