Appendix 1: Pictures of prime numbers for complex UFD

The pictures show the quadratic character and a picture of prime numbers and units for the complex quadratic fields whose domain of integers is a unique-factorization domain, namely

the fields of discriminant congruent 0 modulo 4:

Q(√-1), Q(√-2)

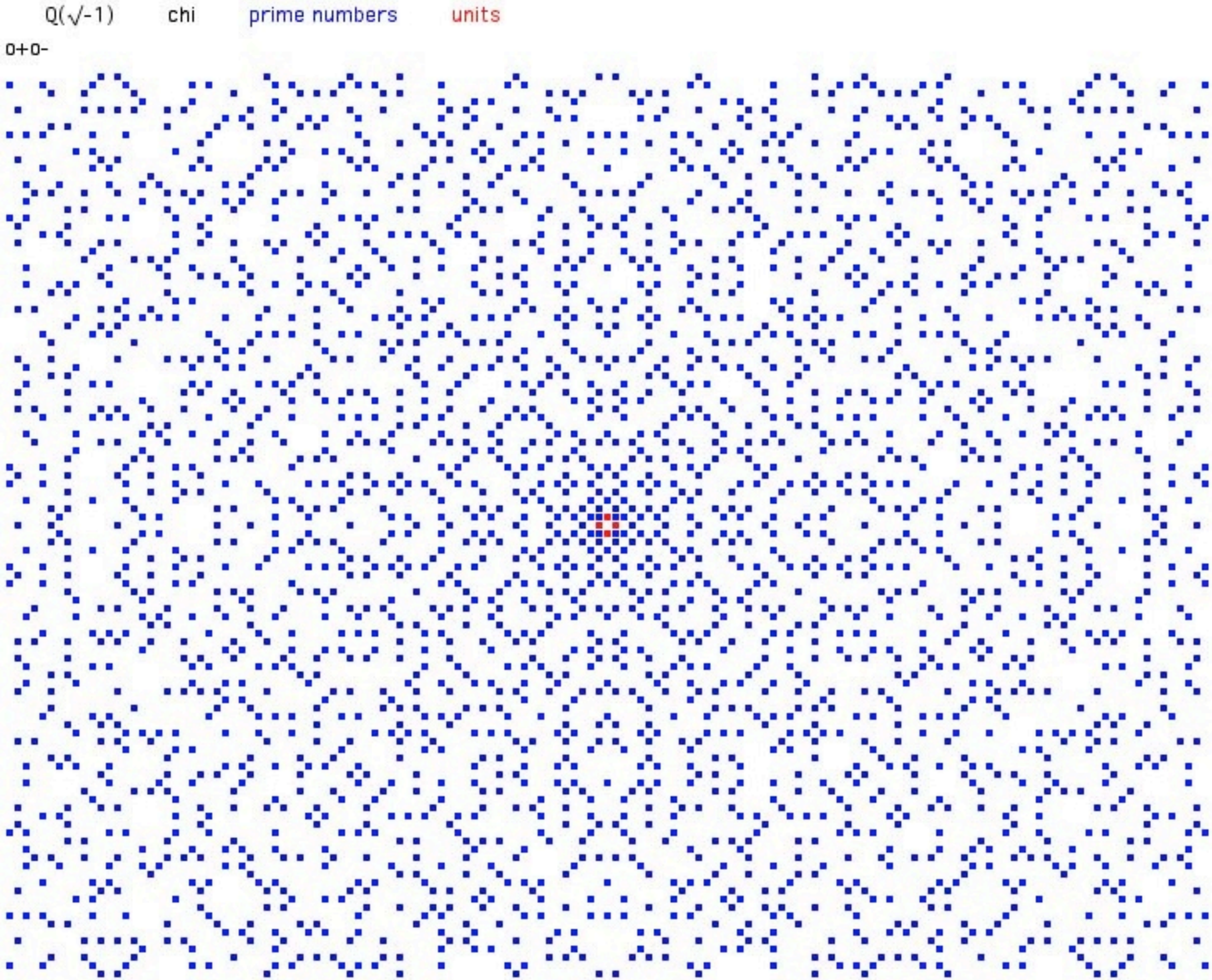
and the fields of discriminant congruent 1 modulo 4:

Q(√-3), Q(√-7), Q(√-11), Q(√-19), Q(√-43), Q(√-67), Q(√-163).

At the top, each picture mentions the field, ℚ(√r), and displays its quadratic character (as far as space allows).

In the pictures, rational integers are placed on the x-axis and numbers of the form √r times rational integers on the y-axis.

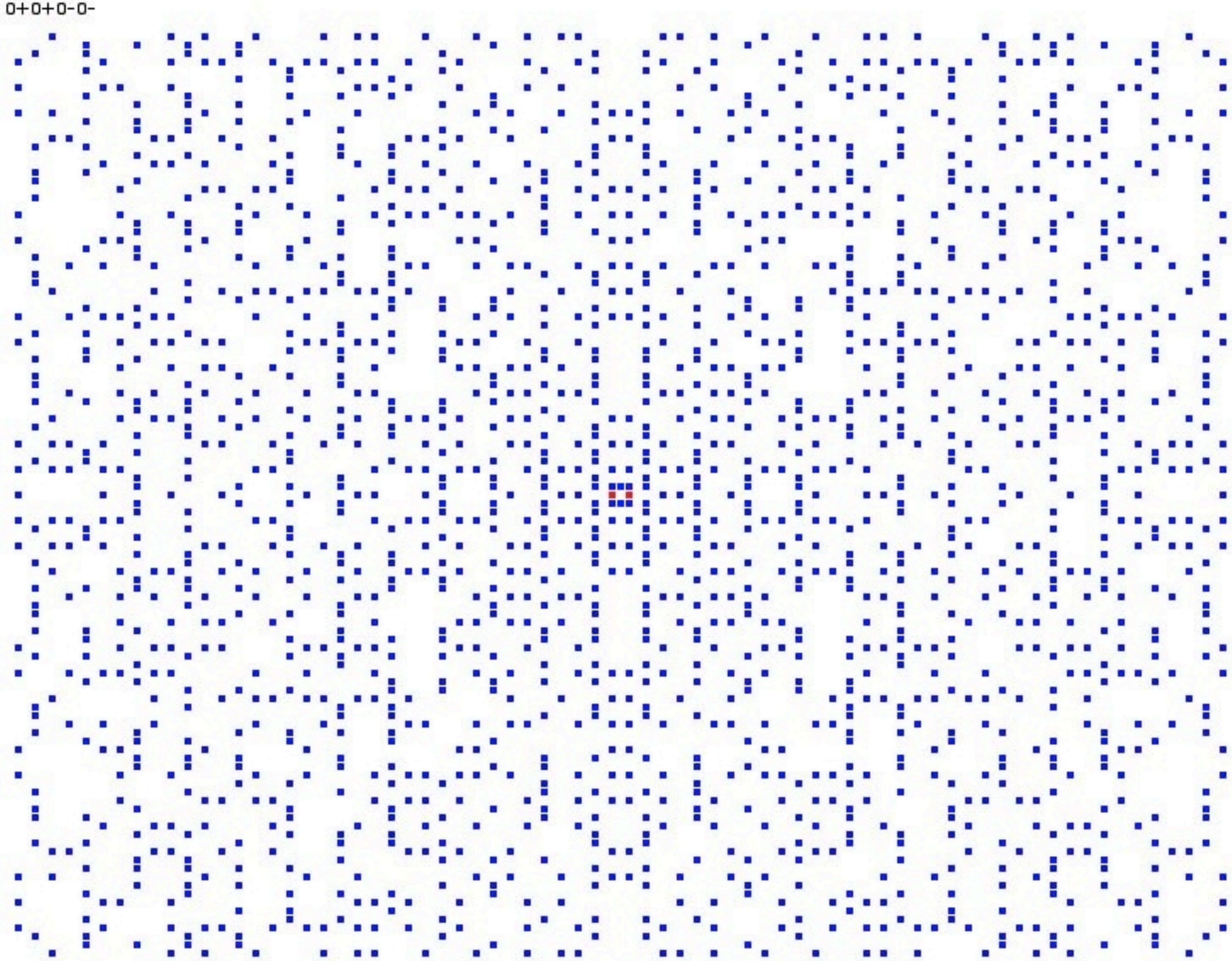
When d ≡ 0 modulo 4, we use a square grid, otherwise a staggered grid, where the grid points form roughly equilateral triangles.



Q(√-1)
chi
prime numbers
units
0+0-

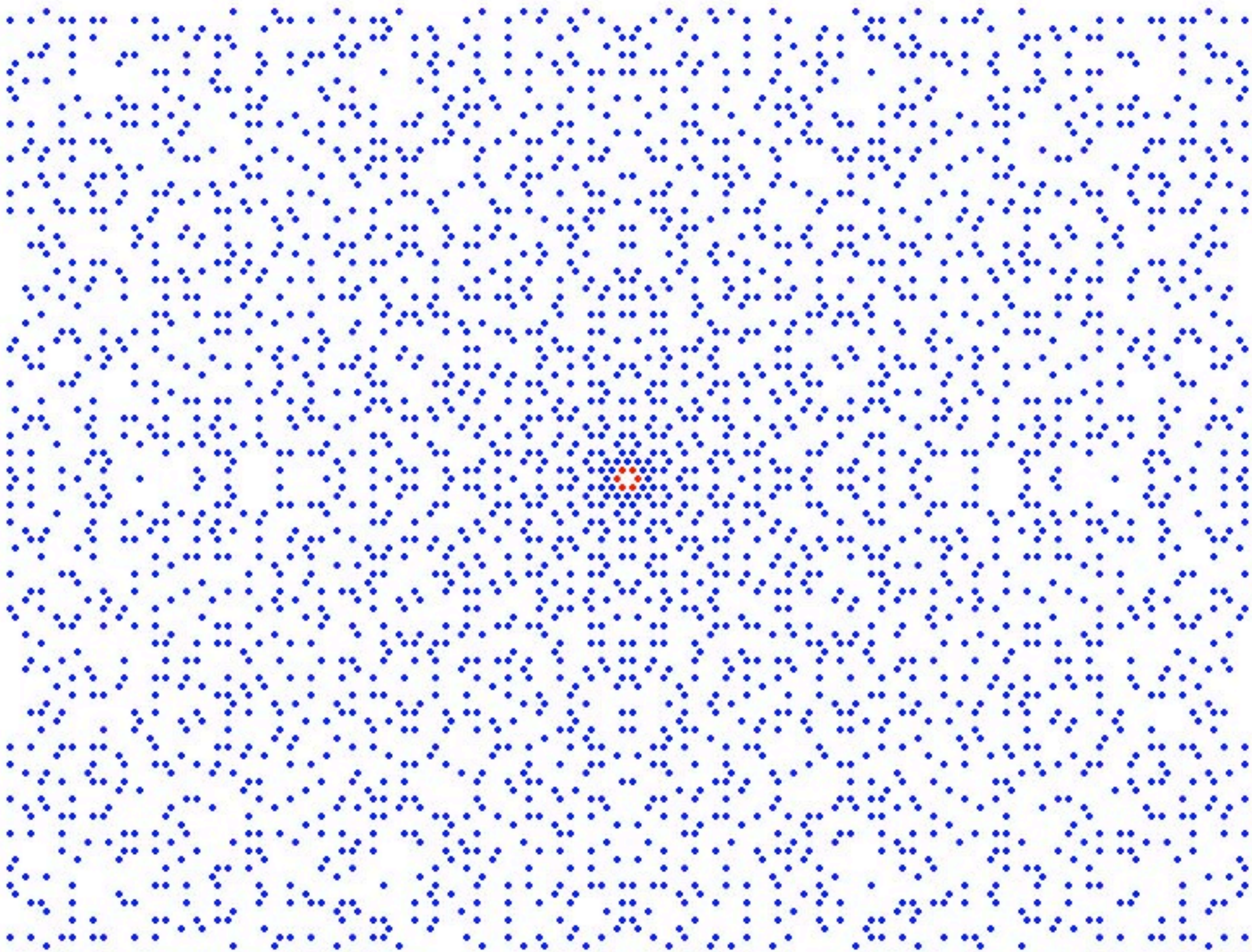
Q(√-2) chi prime numbers units

0+0+0-0-



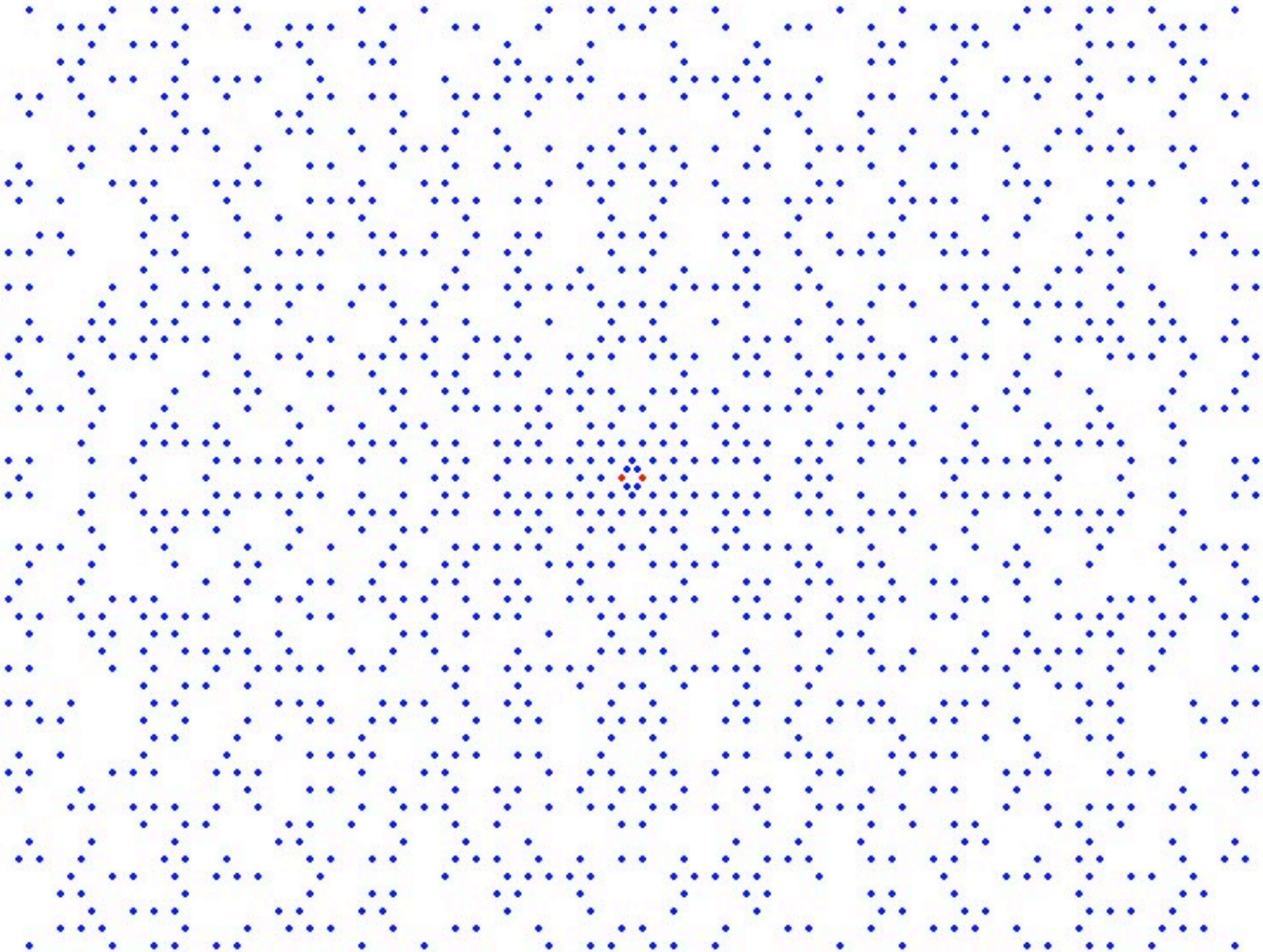
Q(√-3)    chi    prime numbers    units

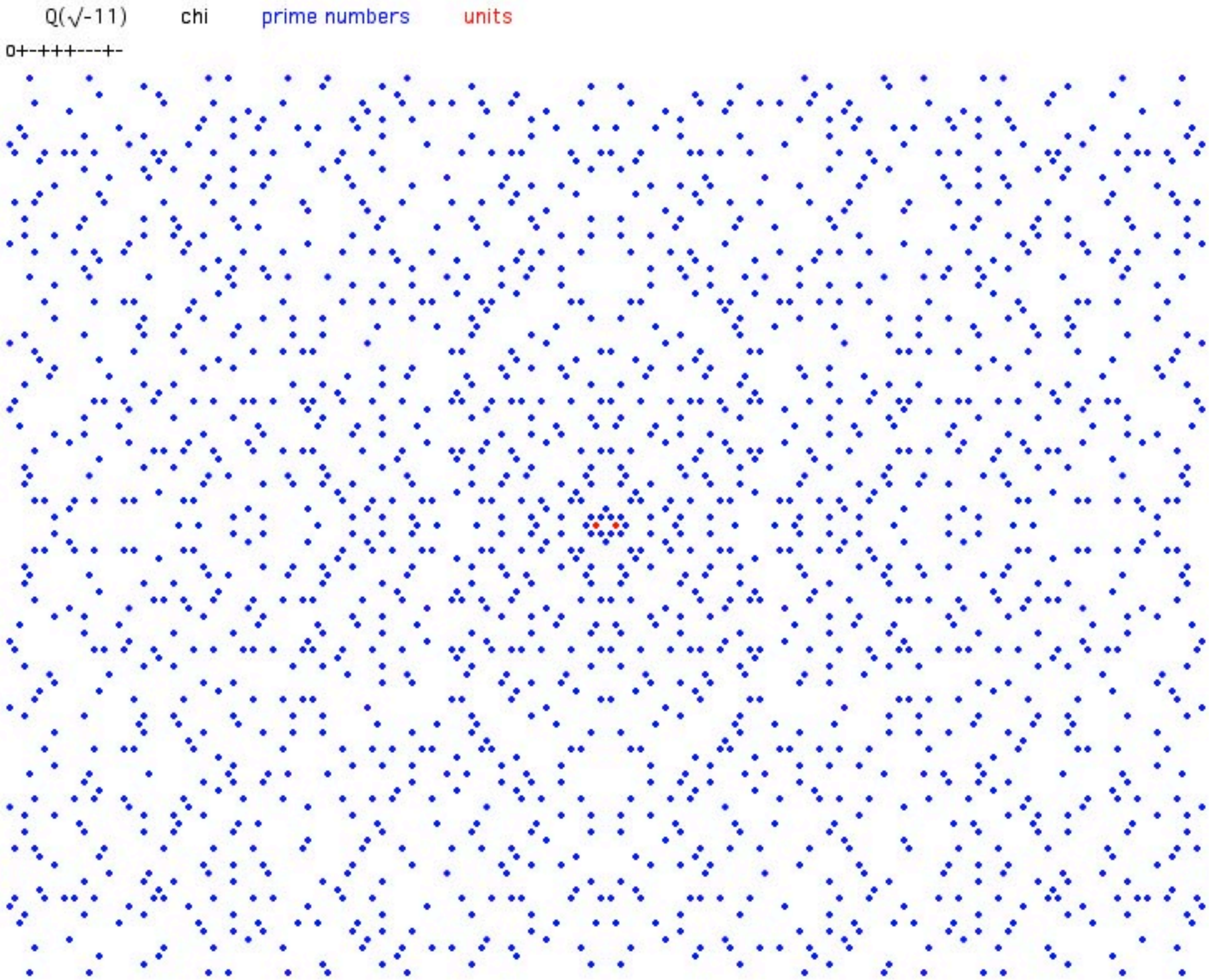
0+-

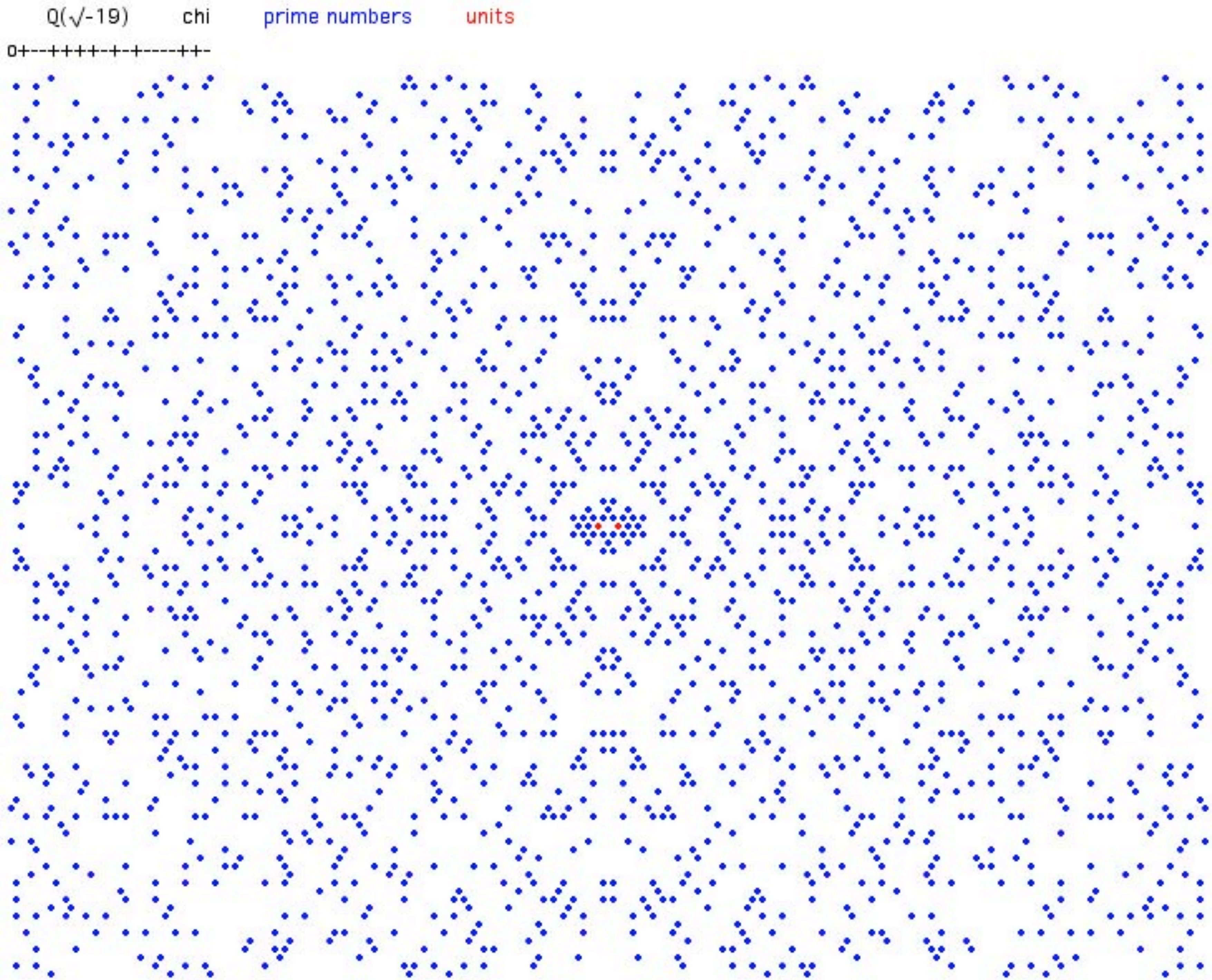


Q(√-7)　　chi　　prime numbers　　units

0++-+--



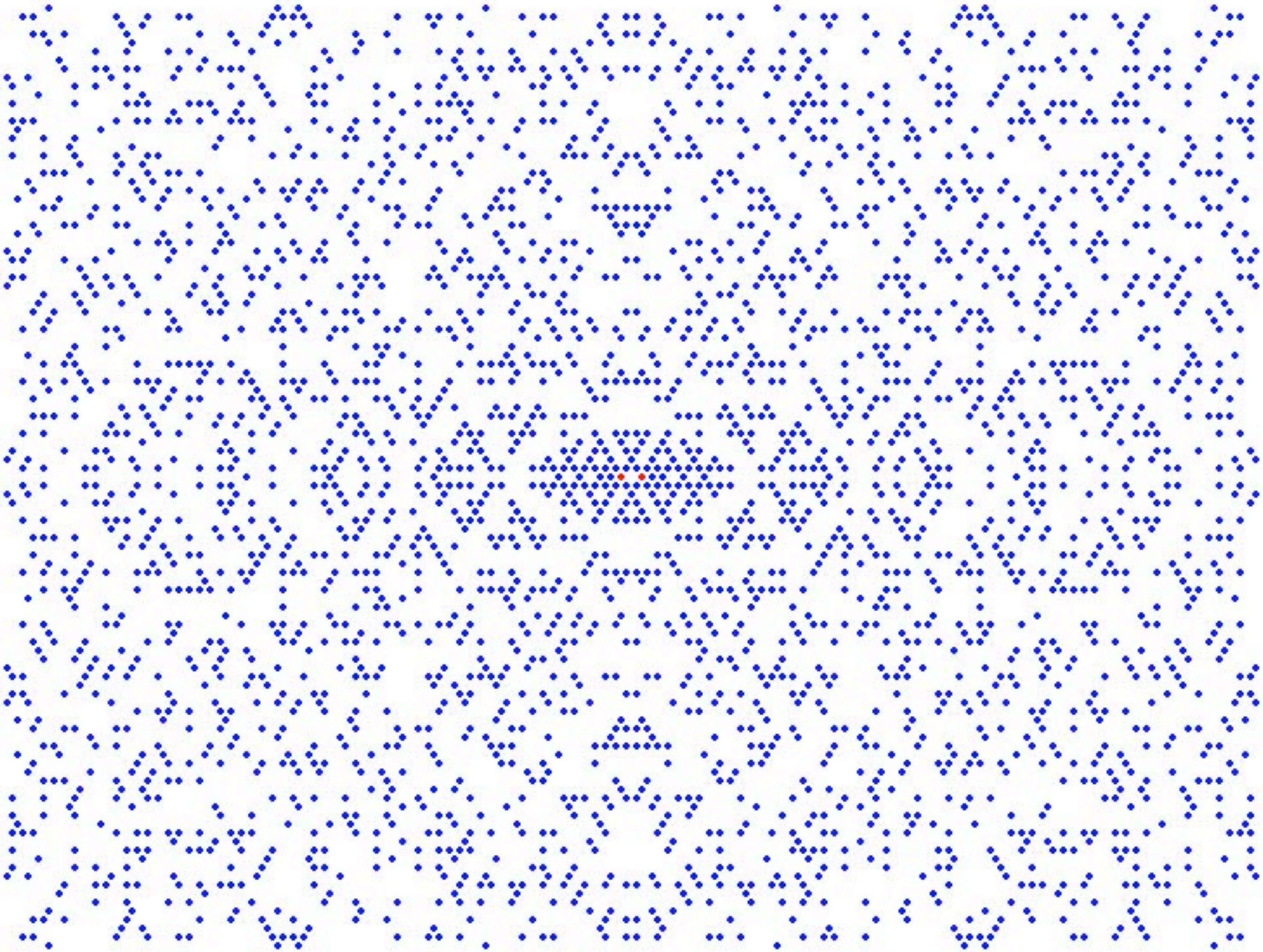

Q(√-11)
chi
prime numbers
units
0+-+++---+-



Q(√-19)
chi
prime numbers
units
0+--++++-+-+----++-

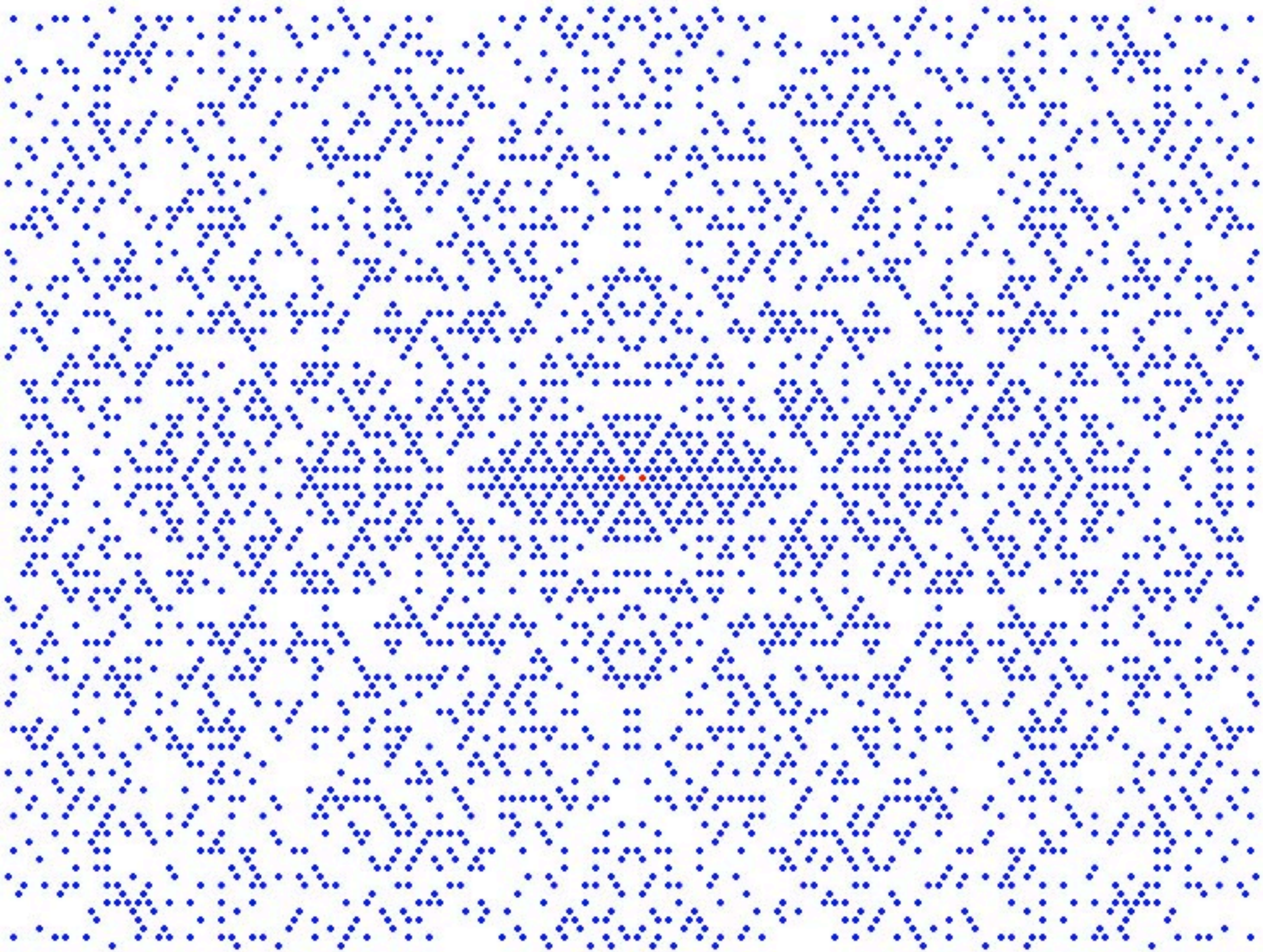
Q(√-43) chi prime numbers units

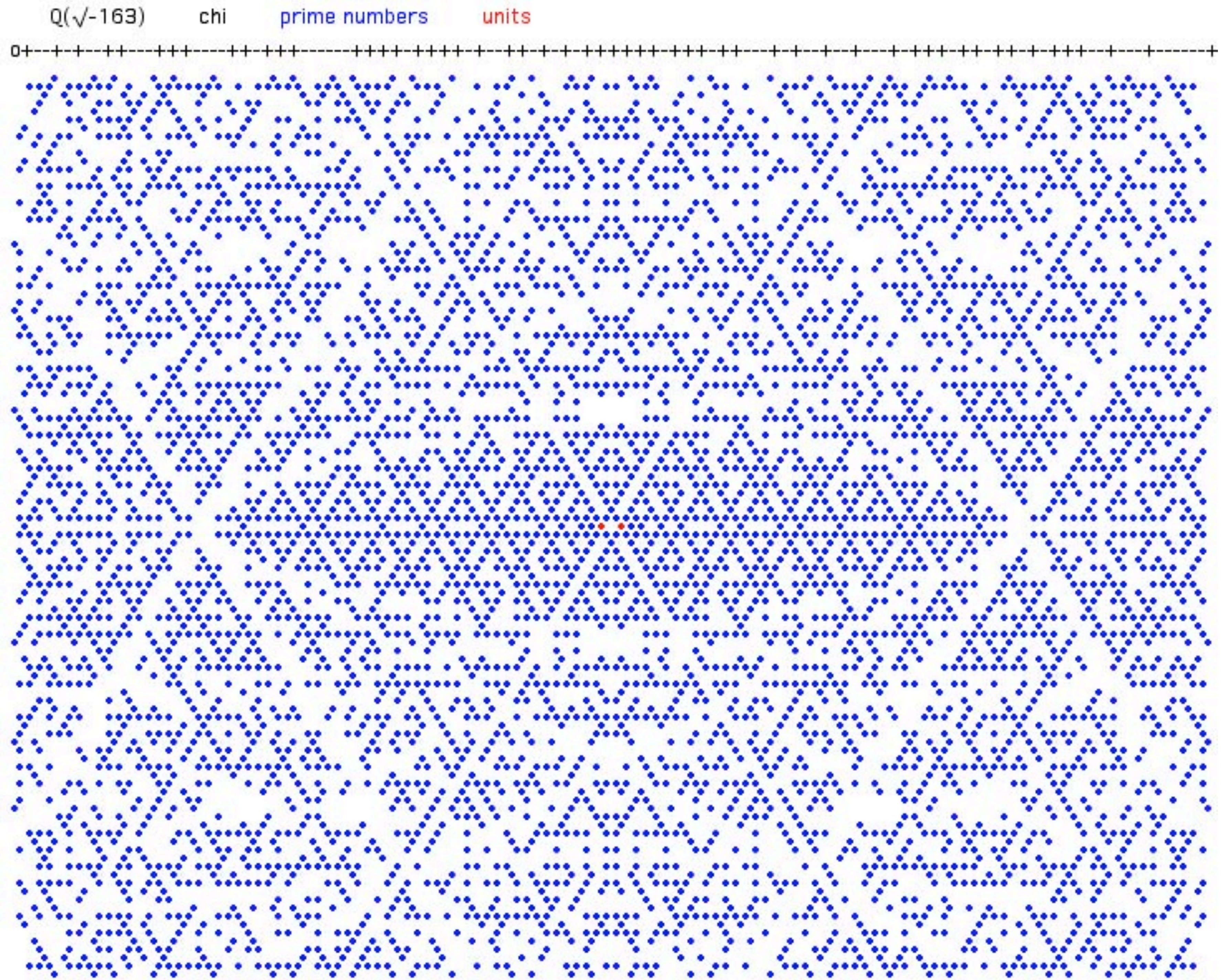
0+--+-+--+++-+++++---+-+++-----+---++-+-++-



Q(√-67) chi prime numbers units

0+--+-+--++---++++-+-++++++--+---+-+++-++------+-+----+++--++-+-++-





Q(√-163)
chi
prime numbers
units