The Contact Challenge

How might we make contact with other civilisations in the universe? One way is by radio messages. However, even though they travel at the speed of light, 186,282 miles per second, they would still take over four years just to reach the very nearest star, so if we sent out a “Hello”, it would be over 8 years before we received a “Who’s calling?”.

One way of sending a message is in a series of zeroes and ones. If the number of characters is a total that can only be found by multiplying two prime numbers, then the message can be fitted perfectly into a grid. For example, with 143 characters, this can only mean that the grid must be 11 x 13. What must be decided is whether the grid is 11 rows of 13, or 13 rows of 11.

Can you decode the following message? First, you have to work out the size of the grid, then whether the grid is tall or wide. Finally, what does the message show? If you replace the zeroes with full-stops, then you may find the message will stand out more clearly.

```
000000001000000000000001111111000000000101110001000000011001000011000001111001001
011000111100000101111001111100001011110011101000001111101010000000100101101110000
001110001001111000111111010011111000111110100011100000111010000011000001111000000
001000001110000000000111011100000000000000100000000000000000000000000010101110100100
010101010001001001011110110010010010110101000100100101101011101101100100000000000
000000001100100110111010110001001010100101110101011001001111001110101010010111101
0101010100101
```

This one is more difficult. Once it’s decoded, what do the symbols actually mean?

```
000000000000000000000000111000001110000000000000111110000000000000000000001000111000
001110000001110000000100000000001111111111000000000000000100010001000100010000001
000100101000000001100111111100110000000000001100100011111000100000111001111010000
000100000001011100001000000000100001000100010001000011111000000100000010011000000
111000010000000001010001110000011100001011101000001000000101100010000111000010000
000110000000000000000000101110100000100001001110111100011100001000000001110000100
010001000001011101000010000111111111100000110000010000010000000100000001000000000
101000000010001111111110000000001000010000100100001111111110000000101000000100
011111111111100000000000010000101000000000000000000000101000000010001111111111111
000000000100100000000000000000000000000000110110000111000111111111100000000010111
000000000000000000000000000000000000000000100111111110000000000010100100001000000
000000000100000000000000000000100011111110000000000000011100011100000000000000010000
000000000000000100011111010000000000001111100011110000000000110101100000000000000
001000011100010000000000011001000011101010101011010110101010000000000100000011000
000000000000100100000100000010000010000000000000000000000100000011100000000001111
111000000000000011111000000000000000000000000100000011100000000011101100000000000
000000000000000000000000000000000100000011111100000001111100001010111010001000100
001110110001001010100000111110110000000111000001010100010001000101000100010101
011100100001111111100000001110000011101100100010001010001100110010101010001000011
111110000000001000000101010001000100010100010001010101010100010001111110000000000
010000001010111011101110010000100010100100101000010011110000000000010000000000000
000000000000000000000000000000000000000100110000000000010000000000011101010111011 0
010100100101011100000000011110000000011100000000000010001010100010101010101010
100000000000001111111111100000000000000110010101100110001001010101011000000000000
000011111000000000000000000100010101000101001001010111010000000000000000000000000
000000000000011100100111010100100010010101110000000011101101000101010000000000000
000000000000000000000000000000000000100001111111111111111000001000000010010100011 1
001001100111010100000100000000000000000000000000100000010101010001000101010100100
101000001111111111111111111111111111000000101010100011001110110001001110000000000
000000000000000000000000000010101110001000101010100100101001100001111110010011 11
010110100010000010010100011101010101001001010011111111111111111111111111111111111
```

Once you have the answers, send me an e-mail. Write to jstone@spaceflight-uk.com

Good luck*!*

Jerry Stone

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