Our Solar Neighbourhood

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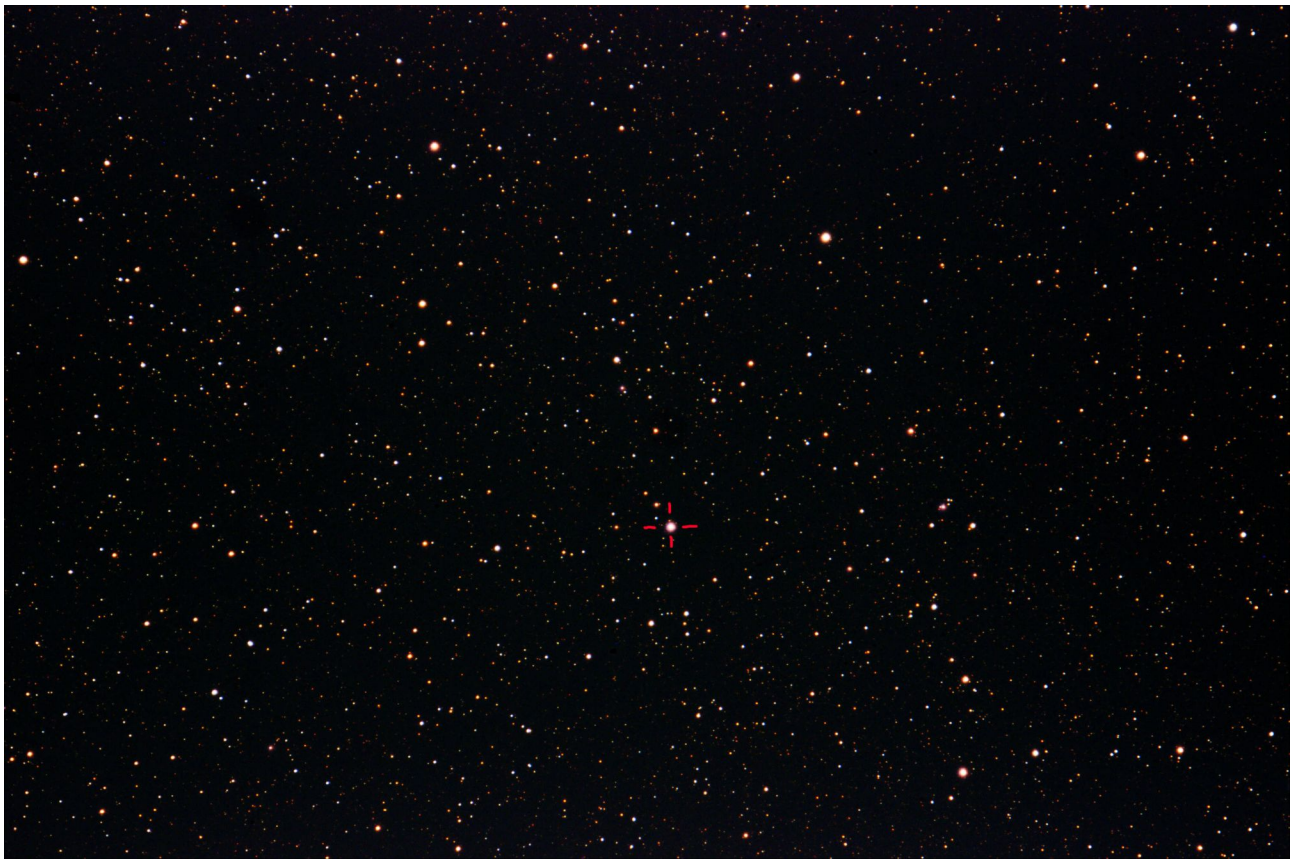

Proxima Centauri - Our nearest star. An 11th magnitude red dwarf (image Roger Powell).

The Ten Parsec Survey, carried out by a consortium of European astronomers, compiled a list of all known objects within a radius of 10 parsecs from the Sun, as observed by the Gaia spacecraft, which measures the positions, distances and motions of stars and is constructing the largest and most precise 3D space catalogue ever made: 1 billion objects.

Ten parsecs is equivalent to 32.62 light travel years and it represents a volume of 523.6 cubic parsecs.

The main results of the Ten Parsec Survey are in the following summary table, which I have extracted from the paper:

Table 3. Summary of the 10 pc sample[a].

Type	Number
O	0
B	0
A	4
F	8
G	18
K	38
M	249
L	21
T	45
Y	19
D	20
N/A	41
Exoplanets	77
Total	**540**
Single	246
Binary	69
Triple[b]	19
Quadruple[b]	3
Quintuple[b]	2

Notes. [a] In the column Type, O, B, A... Y stand for stellar and sub-stellar spectral types, D for white dwarfs, and N/A for objects without a spectral type. The Sun (G2 V star) and its eight planets are not included. [b] The name of the triple, quadruple, and quintuple systems are given in Table 5.

This tells us a few interesting facts about our local neighbourhood.

- There are 540 known objects, of which 422 are known to be stars.
- 118 have no spectral classification or are known exoplanets.
- There are no Class O or B stars.
- Only 12 (3%) are listed in a higher class than the Sun (Class A&F).
- Just 18 (4%) are in the same class as the Sun (Class G).
- The Sun is one of the dominant 7% of stars in the region.
- 287 (68%) of stars are in a lower class than the Sun (Class K&M). A whopping 249 of them (59%) are Class M stars, presumably all or most of them being red dwarfs.
- There are also 85 (20%) brown dwarfs (Class L,T&Y), 20 (5%) white dwarfs (Class D) and 41 (10%) with no spectral classification.
- No neutron stars are listed.
- There are 339 star systems, with 422 stars.
- 246 are single star systems.
- 27% of the systems are multiple star systems, with 217 stars and only 49% of the stars are single star systems.