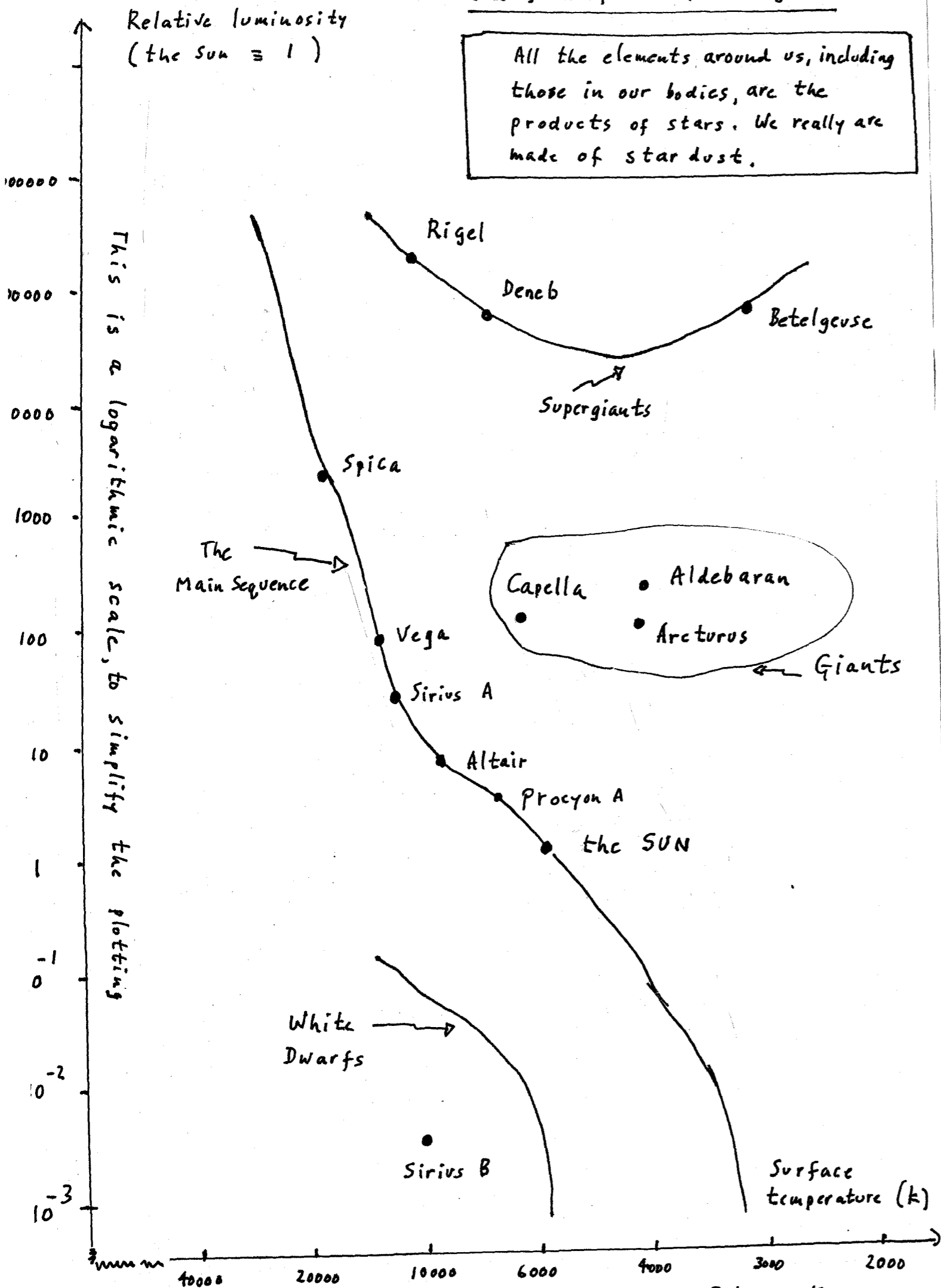


One form of the HR Diagram

All the elements around us, including those in our bodies, are the products of stars. We really are made of star dust.



Further work on stellar evolution

Stars evolve for millions to trillions of years. Correlations between their colours and luminosities suggest that they follow similar evolutionary paths, dictated by their masses.

The colours of stars broadly indicate their temperatures, such that blue stars are hot and red stars cool. The typical luminosities of stars also varies with colours: hot, blue stars tend to be more luminous than than cool, red ones. Danish astronomer, Ejnar Hertzsprung, in 1905 and American astronomer, Norris Russell, in 1913, independently noted similar trends between the luminosities and colours of stars. Both astronomers are now recognised in the name of a diagram which plots the luminosities against their colours: the Hertzsprung - Russell (or HR for short)

HR diagram

On the HR diagram, ninety per cent of stars, including or sun, lie on a diagonal stripe, that runs from luminous, hot, blue stars to less luminous, cool, red ones. This band is known as the Main Sequence, and that stars that lie along it Main sequence stars. In addition to the Main sequence, other groups of stars are evident on the HR diagram. These include a branch of red giants, red stars of similar colours, but a range of luminosities, and a population of white dwarfs — hot, but low luminosity stars — as well as a separate branch of Cepheid variable stars. These have a range of colours, but similar luminosities.