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LAST NAME **FIRST NAME**

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STUDENT NUMBER

Homework #2: Due in class Thursday February 9th

Explain the difference between nuclear fusion and nuclear fission:

How does the number of Solar neutrinos passing through your body every second during the night compare to the number during the day?

The electric power consumption for the whole US is about 5×10^{11} watts. Suppose we attempted to replace the mix of existing power stations (oil, coal, nuclear etc) that generate the power with solar panels that generate an average of 10 watts per square meter.

(a) How large an area, in square kilometers, would need to be covered entirely by solar panels?

(b) What problems can you envisage if such a scheme was attempted?

A star has the same size (radius) as the Sun, but a higher surface temperature. How does the amount of infrared radiation the star emits compare to that of the Sun (be careful with this…)?