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LAST NAME

FIRST NAME

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STUDENT NUMBER

**Homework #1: Due in class Thursday February 2<sup>nd</sup>**

What are sunspots? Why do they appear dark in pictures of the Sun?

Images of the Sun taken in visible light and X-rays appear very different (see e.g. the picture in the Chapter of the textbook titled 'Our Star'). Why is this the case?

If fusion in the center of the Sun were suddenly to cease today, how would the appearance of the Sun change tomorrow?

Why does nuclear fusion require high temperatures?

An astronaut on the surface of Mars learns that a coronal mass ejection on the Sun has occurred. If the material ejected travels at 1000 kilometers per second, how long will it take to reach Mars?