



Why Study the Sun?

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In this presentation we briefly describe the Sun through large number of illustrations and pictures of the Sun taken from early times to the present day space missions. The importance of the study of the Sun is emphasized as it is the nearest star which presents unparalleled views of surface details and numerous phenomena. Our Sun offers a unique celestial laboratory where a large variety of phenomena take place, ranging in temporal domain from a few milliseconds to several decades, in spatial domain from a few hundred kilometers to thousands of kilometers, and in the temperature domain from a few thousand degrees to several million degrees. Its mass motion ranges from thousandths to thousands of kilometers per second. Such an object provides us with a unique laboratory to study the state of matter in the Universe.

The existing solar ground-based and space missions have already revealed several mysteries of the outer environment of our Sun and much more is going to come in the near future from planned new sophisticated ground-based solar telescopes and Space missions. The new technique of helioseismology has unravelled many secrets of the solar interior and has put the Standard Solar Model (SSM) on firm footing. The long-standing problem of solar neutrinos has been recently sorted out, and even the 'back side' view of the Sun can be seen using the technique of holographic helioseismology.

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