



Sun – Our Fascinating Star

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Introduction

Sun, a star of spectral type G2 is the main source of energy to the Earth. Being close to the Earth, Sun produces a resolvable disk of great detail, which is not possible for other stars. Stars are classified based on their surface temperature. O B A F G K M are the types of stars, the hot stars O having surface temperature ranging from 25000-60000 degree Kelvin, whereas the cool M type stars have 3000 degree. Depending on the small temperature scale variations, sub classifications 0, 1, 2,..3,....9 are made in each type. The temperature of the stars determines the physical and chemical conditions prevailing in the atmospheres of the stars. In the spectrum of O type stars, the

singly ionized helium lines are strong, and in the late type M stars the molecular lines appear stronger. Sun, being a G type star, the singly ionized Ca K and H lines are found to be stronger in its atmosphere (Saha 1921). Sun provides the illumination to the earth, warms us, nurtures our crops, and influences our weather. It is located at a distance of 20,000 light years from the centre of our galaxy 'Milky Way'. However, it is only an average star among 100 billions stars of our galaxy. Likewise 100 billion galaxies are known to exist in our Universe. When seen from the distance of our neighbouring star 'Alpha Centauri', sun would be just a point source in the sky. However, from our vantage point, it is possible for us to see how this jewel of star is made of and the interesting activities that take place in its atmosphere. More interestingly it is now possible for us to even probe what is going on inside our star through the study of helioseismology.

Interior of the Sun

Sun has a size or diameter of approximately 1,400,000 km. Volume wise, it can fill in one million earths. We will make our imaginary travel from the centre of the sun to the surface from where the light starts

