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OPTICAL OBSERVATIONS OF THE SUN

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In this lecture the following aspects of solar physics were dealt

1 Radiative processes in the photosphere, dynamics, formation and characteristics of granulations, meso granulation, supergranulation and solar rotation

2 Magnetic field in sunspots, plages and fine structure of flux tubes, network and their temporal variation

3 Morphological studies of solar chromosphere from eclipse and fine structure optical data and discussion of various chromospheric models

4 Some aspects of optical studies of the solar corona, coronal transients, coronal holes and magnetic field structures

5 Reference was made to the emerging field of helioseismology as a very powerful technique to probe the solar interior

6 A brief description of the various types of instruments being used for solar research and emphasis was placed on observations from ground and space, for finest possible details on the Sun, which hold key to many unanswered questions in solar physics

It was pointed out that to understand, the physical processes involved in diverse phenomena of the solar atmosphere, requires that we determine cospatial thermodynamic, velocity and magnetic field structures together with their temporal evolution We must be able to identify and quantify the major energy and momentum processes It seems this goal cannot be achieved without a combination of precise observations coupled with careful diagnostics, based on realistic physical models From detailed solar observations made, during the past 50 years or more, in a wide spectral range, many interesting discoveries have been made and now the time has come to understand these phenomena with better diagnostic techniques