# THE SOLAR OCCULTATION TECHNIQUE: A REVIEW AND FIRST RESULTS FROM METEOR/SAGE III

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This paper will provide a historical review of the remote sensing technique of solar occultation from a space platform. Remote sensing missions from the late 1970 with instrument, Stratospheric Aerosol Monitor II (SAM II) that flow on the Nimbus spacecraft, to the recently launched instrument, SAGE III on METEOR, will be discussed. The discussion will also cover other remote sensing missions with solar occultation technique such as SCIAMACHY on ENVISAT and POAM series of instruments. Future missions such as SciSat with ACE and MAESTRO instruments and other will also be described. The evolution in the sensor capability can be seen from the improvement in instrument design from a simple one spectral channel instrument like SAM II, to the multi-spectral capability instrument utilizing array detector technology such as SAGE III and SCIAMACHY. The retrieval algorithm that was developed to handle the multi-spectral measurements also increases in complexity from the simple onion peeling algorithm to the more complex spectral fitting or other nonlinear iterative algorithms. Both the advancement in instrument design and evolution in algorithm for the advanced sensors will be discussed using the SAGE III mission as an example. Preliminary data from the recently launched SAGE III instrument on the METEOR spacecraft will be presented and discussed.