



Falling sphere temperature measurement validation of SABER and AIRS instruments

F. J. Schmidlin (1), R. A. Goldberg (2)

(1) NASA/Goddard Space Flight Center, Wallops Island, Va., USA, (2) NASA/Goddard Space Flight Center, Greenbelt, Md., USA, (fjs@osb.wff.nasa.gov / Fax: 001 757 824 1036 / Tel: 001 757 824 1618)

Small meteorological rocketsondes containing inflatable falling spheres were launched as part of the Mountain and Convective Waves Ascending Vertically (MaCWAVE) and SAGE III Ozone Loss and Validation Experiment (SOLVE-2) campaigns from ESRANGE, Sweden during January 2003. The spheres were instrumental in defining the structure of the stratosphere and mesosphere between 50 and 90 km during the period 15-30 January. Three intensive launch periods of 12 hours intended to provide insight into mountain wave induced gravity waves provided valuable details of smaller scale structure. The sphere temperature measurements were compared with temperatures retrieved from SABER on the TIMED satellite and from AIRS on AQUA. High altitude radiosonde data also are used in the analysis. The comparison results indicate that on some occasions, temperature measurements are not in agreement, while on other occasions agreement is quite reasonable. Each technique has advantages and disadvantages that are considered during the analysis and are discussed with regard to the temperature profiles.