

## Measurement of ozone density profile over Korea by rocket-borne UV radiometer

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Sounding rockets have played a significant role in measuring ozone concentration profiles of the intermediate altitudes where the balloons and satellites cannot reach for the precise in situ measurements. KARI has flown four sounding rockets since the KSR-I in 1993. KSR-II, a two-stage sounding rocket of KARI was launched successfully at the west coast of the Korean Peninsula at 1000LST, June 11th, 1998. One of its scientific mission was to measure ozone density profile in the middle atmosphere. For this mission, 8-channel UV and visible radiometers was onboard the rocket. The apogee of the rocket was 137 km and the total flight time was 365 seconds. The rocket measured a stratospheric and mesospheric ozone density profile during its upleg phase and transmitted the data to ground station in real time. Attitude correction of the raw data with reference radiometer in 450 nm and inertial navigation system was carried out to obtain the ozone density profiles up to 70 km. Comparisons with Dobson spectrophotometer, ozonesonde, and HALOE onboard the UARS of NASA showed reasonable agreements. The bulge of rocket measurement near 50 km is considered to be the effect of upward motion which can bring the ozone-rich atmosphere from the lower altitudes near the peak.

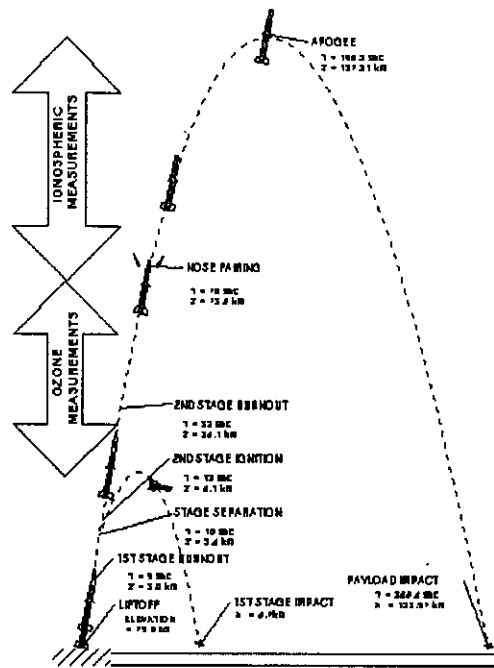


Figure 1. Trajectory of KSR-II with events

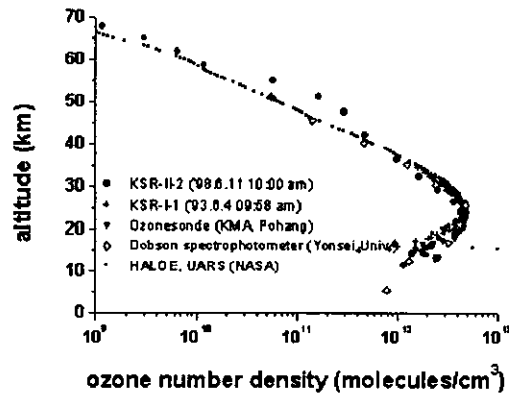


Figure 2. Retrieved ozone density profile. HALOE, Dobson spectrophotometer and balloon data are shown for comparison.