The NOAA Aeronomy Laboratory deployed a vertically pointing S-band profiler (2.8 GHz) at the Kendall-Tamiami Airport (the Eastern Ground Site) during the CRYSTAL-FACE campaign held 3 - 31 July 2002. The S-band profiler observed precipitating cloud systems with reflectivities greater than 0 dBZe at 10 km.

A Ka-band profiler (35 GHz) operated by the NOAA Environmental Technology Laboratory and a W-band profiler (94 GHz) operated by the University of Miami were also deployed at the Eastern Ground Site.

While the shorter wavelength Ka-band and W-band profilers (0.86 cm and 0.32 cm) are affected by attenuation through liquid clouds and precipitation, the longer wavelength S-band profiler (10 cm) provides unattenuated estimates of the reflectivity.

The S-band profiler observations will quantify the attenuation and provide a correction for the attenuation inherent in shorter wavelength cloud profilers.

Q. Why deploy a precipitation profiler to study cirrus clouds?
A. Because cloud profilers under estimate the reflectivity in cirrus clouds when precipitation is present and the precipitation profiler can correct for this attenuation.