

New Operation of NASA's DC-8 Sub-Orbital Research Platform

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The University of North Dakota has assumed operation of NASA's DC-8 Airborne Research Laboratory. The University's major wish is to serve the research and education needs of the international scientific community. Furthermore, the intent is to seek full integration into the Global Earth Observatory System of Systems (GEOSS), so that monitoring of Earth's global environment can synthesize all three spatial dimensions – ground, airborne, and space – plus time. The DC-8 has a range greater than 9,200 kilometers and can fly to 12,500 meters altitude. It can carry payloads to a total of 13,600 kilograms. Large instruments can be accommodated and their value enhanced by operating simultaneously with a suite of complementary instruments. The aircraft will continue to be operated worldwide. Special viewports, power systems, and instruments onboard the aircraft support a variety of research programs in atmospheric chemistry, archaeology, ecology, hydrology, volcanology, soil science, biology, and other disciplines. Investigators may request their own custom instruments be carried as well. Missions are flown for three primary purposes: sensor development, verification of satellite sensors, and observations of Earth's surface and atmosphere. The University of North Dakota wishes to make NASA's DC-8 more widely available. UND also wants to hear from prospective users about how they could be better served. In particular, how might it help a research community create a suborbital research program for the future? Recent missions will be described to illustrate the usefulness of the DC-8 for varied scientific uses. The operational strategy will also be explained for the benefit of prospective users.