

Her Eye in the Hurricane: During the college days of Dr. Joanne Simpson at the University of Chicago, meteorology professor Carl-Gustaf Rossby's remark about women not being accepted to work in the field of meteorology would subsequently prove to have merit. No one would hire her as a meteorologist. Turned down repeatedly because of her gender, Simpson accepted a scientific teaching position at the Illinois Institute of Technology where she went on to become an Assistant Professor of Physics.

At the time, atmospheric air movements in the tropics were literally unknown. Tropical weather was yet to be explored, meteorological inquiries were yet to be proposed, interest was yet to be stimulated. There was no obvious interest by any of the men to scientifically study and research clouds. Tropical storm clouds were still thought to be a symptom not a cause of weather. Dr. Simpson, however, thought otherwise. She theorized answers to tropical weather conditions in fact lay directly in the very tall clouds in equatorial regions.

During her summers at IIT, she became involved in a project at Woods Hole Oceanographic Institution in Massachusetts where she conducted research analyzing tropical clouds. Her documented data demonstrated how important clouds were in driving tropical circulations, specifically in the destructive driving forces of hurricanes. She drew maps of cloud formations that revealed specific patterns that are now routinely seen on satellite images. This work resulted in her obtaining a full-time position at Woods Hole in 1951.

Dr. Simpson requested the Office of Naval Research provide the Woods Hole team with an airplane outfitted with meteorological instruments in which to fly into the tropical clouds to gather empirical measurements to validate her computations. However, the Woods Hole Director said that women were not allowed on their field trips. But the Navy Officer who arranged for the aircraft, Captain Max Eaton of the Office of Naval Research, simply said, "No Joanne, no airplane." :) Henceforth, Woods Hole dropped its gender restrictions on all research vessels. This opened another door for future female researchers thanks to Dr. Simpson and in this case, Captain Eaton as well.

In her landmark paper "On the structure and maintenance of the mature hurricane eye," she documented this self-sustaining tropical convection in the cumulonimbus clouds in eye of the hurricane that created the heat to drive the hurricane.

In 1960, Dr. Simpson now was a full Professor at UCLA where she designed and taught graduate classes as well as authored two books. Her work included how clouds behave after being seeded, which yet had not been resolved or understood. To empirically test her first computerized cloud model Dr. Simpson flew up above the clouds to film the activity down in her clouds. In 1964, Dr. Simpson left UCLA and took a position with the National Weather Bureau, which later became the National Oceanic and Atmospheric Administration.

In 1974, Dr. Simpson became an Endowed Chair Professor in the Environmental Science Department at the University of Virginia. But, because she was a woman, was not regarded as a real professor by the all-male faculty. Her ability to work in a traditionally tolerated gender disparate atmosphere was severely restrictive. She needed equal opportunity in order to conduct her serious scientific research.

Dr. Simpson took a leave from the university to work at the new Laboratory for

Atmospheres at NASA's Goddard Space Flight Center. There she was offered the head position of the Severe Storms Branch. At NASA she found a gender-friendly environment in which to do and expand her work and found something new to her. She found she could talk science with other "female" scientists. She recalled how one day in the ladies room she encountered two other women scientists washing their hands and discussing meteorology. Never before had she been in an office where anyone but she and the secretaries used the ladies room. Dr. Simpson remained involved with NASA until her death.

In 1986 NASA asked Dr. Simpson to lead the Tropical Rainfall Measuring Mission. TRMM was a joint space mission study team between NASA and the Japan Aerospace Exploration Agency (JAXA) for a proposed data collecting weather satellite. The satellite mission was to carry the first space-based rain radar to measure rainfall across the tropics and subtropics. TRMM met or exceeded all its goals, and the satellite has led to remarkable meteorological discoveries. It is part of NASA's Mission to Planet Earth, a long-term, coordinated research effort to study the Earth as a global system. The TRMM satellite was launched in 1997 from the Tanegashima Space Center in Japan.

Dr. Simpson was the driving force behind this first satellite mission to study tropical rainfall from space and considered her involvement to launch the satellite, still operating today, to be the most important accomplishment of her career.

The American Meteorological Society's highest honor, the Carl-Gustaf Rossby Research Medal, was awarded to Dr. Joanne Simpson in 1983 for her outstanding contributions to man's understanding of the atmosphere. Ironically, it was the same Rossby who had said she would never find work in meteorology because of her gender. Dr. Simpson recalled, "He told me that I would look both ridiculous and pathetic if I didn't really make it big after making such an unconventional spectacle of myself in my fight to become a meteorologist."

In 1989, her colleagues elected her President of the American Meteorological Society. As the first woman to hold that position, it became just one more accomplishment, just one more of so many reasons Dr. Joanne Simpson could hold her head high in the clouds with her eye in the hurricane.

Sources: http://geogain.org/?page_id=52

<http://www.islandnet.com/~see/weather/history/joannesimpson.htm>

<http://earthobservatory.nasa.gov/IOTD/view.php?id=43027>