

# Blue Aurora

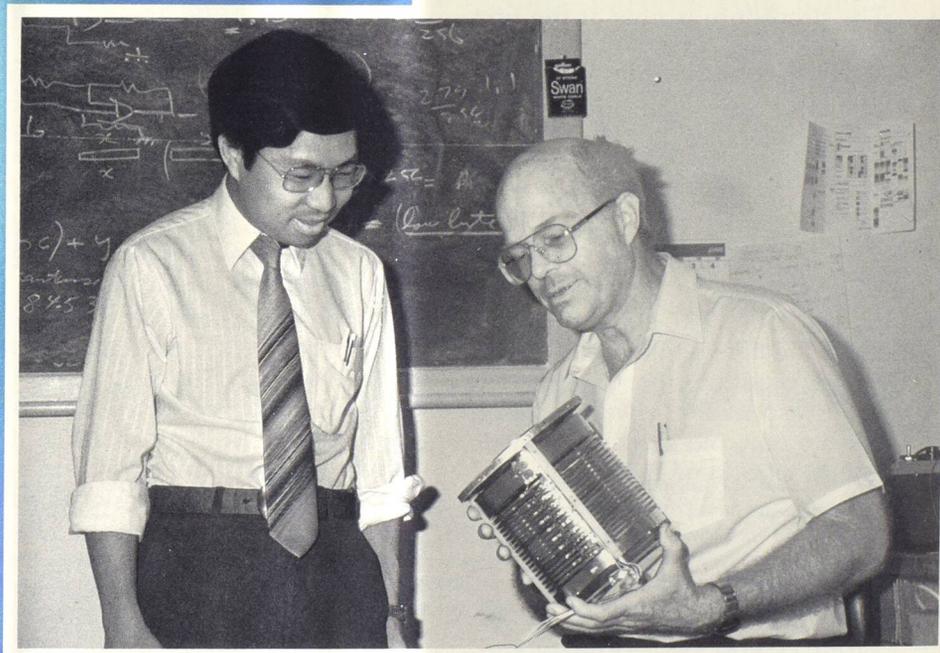
## Investigating earthspace

by Stephen Haines

Canadian scientists recently completed a series of experiments in the world's largest laboratory — the ionosphere. For years, studies of the aurora borealis — our "Northern Lights" — have been limited to passive observation from the ground. The advent of satellites changed the point of reference, but the research remained simply the recording of events. Now, NRC scientists Brian Whalen and Andrew Yau have initiated a new, active research program — they have turned the ionosphere into a working facility.

The experimental exercise was divided into two phases — the first disrupted the aurora, bringing it to a temporary halt, while the second stage ignited a man-made aurora. Both studies were designed to bring about a better understanding of the near-earth environment.

Brian Whalen's Project Waterhole, in 1980 and February, 1983, used rockets fired from the Churchill, Manitoba, rocket range to carry chemicals into the ionosphere. When released, the chemicals combined to form a cloud of water va-



Andrew Yau and Brian Whalen have converted the upper atmosphere into a research laboratory.