

Alaska Science Forum

March 22, 1976

Barium Releases Article #19

by T. Neil Davis

This column is provided as a public service by the Geophysical Institute, University of Alaska Fairbanks, in cooperation with the UAF research community. T. Neil Davis is a seismologist at the institute.

Again this year rockets are being flown from Poker Flat Research Range, near Chatanika, to create high-altitude barium releases. Five rockets, each carrying four to twelve releases, are being flown, on clear nights sometime in late March and early April.

Each release ejects a small quantity of barium vapor that is visible from the ground and which permits measurement of the wind and the electric field in the upper atmosphere. The release first appears in the form of a rapidly expanding yellow-green ball. Part of the barium vapor remains neutral and drifts with the wind forming a green cloud. From this cloud a reddish-purple cloud of ionized barium vapor emerges. This cloud drifts away under the influence of the electric field.

Since the releases are at very high altitude, 150-300 km, they can be seen everywhere in central and northern Alaska. When feasible, there is an attempt to notify area radio stations of impending launches so that Alaskans can observe the releases if they choose.

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