
JOURNAL CLUB

Influence of the Ionosphere
on the Altitude of Discrete Auroral Arcs

by

Charles Deehr

Professor of Physics, Emeritus, Geophysical Institute

ABSTRACT

The altitude of auroral arcs has long been a subject of auroral research. During the spring of 1960, we measured the altitude of the maximum luminosity of single, discrete auroral arcs by photometric triangulation from College and Fort Yukon. We found a change in altitude during twilight and puzzled over it for about two years, then forgot it. The dismissal of this conundrum led to skewed interpretation of some subsequent measurements of arc altitude. The recent discovery by others of the effect of sunlight on the magnetospheric electron acceleration mechanism associated with discrete auroral arcs awakened our recollection mechanism, and led to a review of data, old and new. The result is a story of revelation, reconciliation, and redemption in auroral physics.

Friday, September 10, 2004
Elvey Bldg. Auditorium
3:45 pm