



WEATHER DECISION TECHNOLOGIES

Bringing the World Wide Lightning Location Network (WWLLN) to Global Customers



Lightning Content

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The World Wide Lightning Location Network (WWLLN) was the first and is the longest running, truly global lightning detection network. Weather Decision Technologies (WDT) has an exclusive commercial license to provide the data from this network to our customers and partners. The WWLLN was founded in 2001, and is operated by the University of Washington in Seattle. WDT has been providing WWLLN data commercially since 2007.

The WWLLN currently includes 55 sensors placed around the world, locating over 25 million strokes per month globally (See image below). Data are collected from these 55 sensors nearly instantaneously via the Internet by two central processing stations located in Seattle, Washington and Dunedin, New Zealand. WDT accesses data from both of these WWLLN central analysis stations in real-time, providing a fully redundant service to our customers. Data are provided in one minute packets with less than a few seconds delay.

Full Global Lightning Detection

The unique and patented WWLLN lightning detection sensors are capable of detecting lightning stroke sferics from more than 10,000 km away, enabling full global lightning detection. WWLLN uses at least five sensors to detect a lightning stroke for that stroke to be considered valid, thus allowing error analysis on each stroke location. This requirement ensures location errors of less than 9 km worldwide. The network has microsecond accuracy and detected strokes are made available within one minute. The detection efficiency is 20-40 percent for high amperage strokes: i.e., greater than 90 percent of all active thunderstorms are identified on the globe in real-time by the WWLLN.

WWLLN provides a critical capability of identifying convective activity anywhere in the world, and in many regions, is the only source of such information, making it an important tool for aviation, marine operations and for lightning safety in places where no other data are available (See image on the right). The WWLLN is also a key data source for understanding the electrical nature of hurricanes or typhoons and possible links between lightning discharges and evolution of those phenomena. Recent papers related to WWLLN science and operations are found at <http://wwlln.net/publications>.

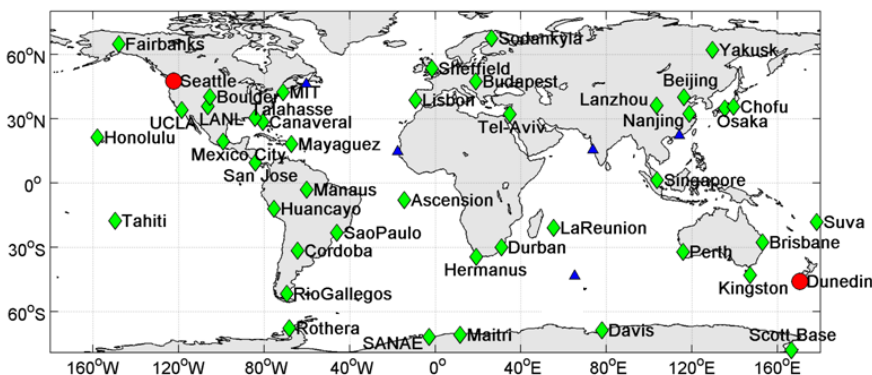
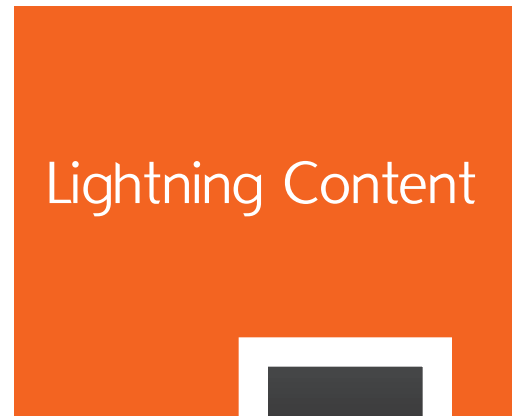
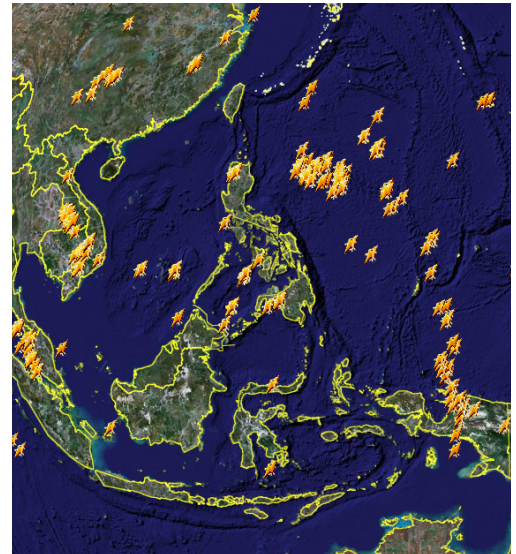


Figure 1. WWLLN Station Distribution (as of Feb 2010).
Green: active stations; Blue: Future locations; Red: central processing.

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