(Lowe, 2011): Tephrochronolgy and its application: A review (in Quaternary Geochronology)

* “Few if any geochronological methods can match the precision [tephrochonology] offers temporally and spatially.”
* Tephrochronolgy is an age-equivalent dating method: ages of a tephra layer are determined using other (often absolute) dating methods and can be transferred to other locations where the layer is found as well
* Laboratory methods used to fingerprint tephras include:
  + - Mineralogic (petrographic) examination by optical microscopy
    - Geochemical analysis of glass shards or loose mineral grains using:
      * electron microprobe
      * …
* Palaeoenvironmental or palaeoecological context may also be useful for correlation (Reyes et al., 2010)
* Explosive, tephra-generating eruptions typically last between minutes and months , rarely exceeding one or two years

(Reyes et al., 2010): A late-Middle Pleistocene (Marine Isotope Stage 6) vegetated surface buried by Old Crow tephra at the Palisades, interior Alaska (in Quaternary Science Reviews)

* “[R]ecords of in situ vegetation directly underlying … tephra … could provide paleoecological data from the moment of tephra deposition and help refine its chronostratigraphic significance.”
* The ecology of the tephra buried surface and associated sediments suggest the local presence of mesic tundra, wet meadow, and aquatic habitat. There is no evidence for the presence of boreal forest at the time of tephra deposition. Our paleoecological data thus indicate a late-MIS 6 age for Old Crow tephra.