

Supplementary Information (SI)

Table S1

Table S1: Lake Waiiau (LW) and Rain Water Composition Relative to $\text{Na}^+ = 1.0^*$

	Na^+	K^+	Mg^{+2}	Ca^{+2}	Cl^-	SO_4^{-2}
LW**	1	0.59	0.64	0.59	2.89	0.19
Rain***	1	0.71	0.79	0.95	1.47	0.42

*Lake water $\text{Na}^+ = 6.4$ mg/l; rain water $\text{Na}^+ = 0.19$ mg/l. Based on references S1 and S2. The lake also contains measurable levels of Cu, Fe, Ni and Zn (44).

**Collected July 1972

***Collected at Saddle Road, Hawai'i, 29.3 km from sea, ~1700 m, Oct 19-20, 1956-57

Figure S1: Miller's "volcanic" spark discharge apparatus



Figure S2: Laboratory based volcanic lighting (courtesy Betty Scheu and Donald Dingwell).



References

S1. J. A. Maciolek, J. A. (1982). "Lakes and lake-like waters of the Hawaiian Archipelago." *Occasional Papers of Bernice P. Bishop Museum*, XXV: 1-14.

S2. Eriksson, E. (1957). "The chemical composition of Hawaiian rainfall." *Tellus*: 509-520.