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# Hot-spring inputs and climate drive dynamic shifts in archaeal communities in Lake Magadi, Kenya Rift Valley

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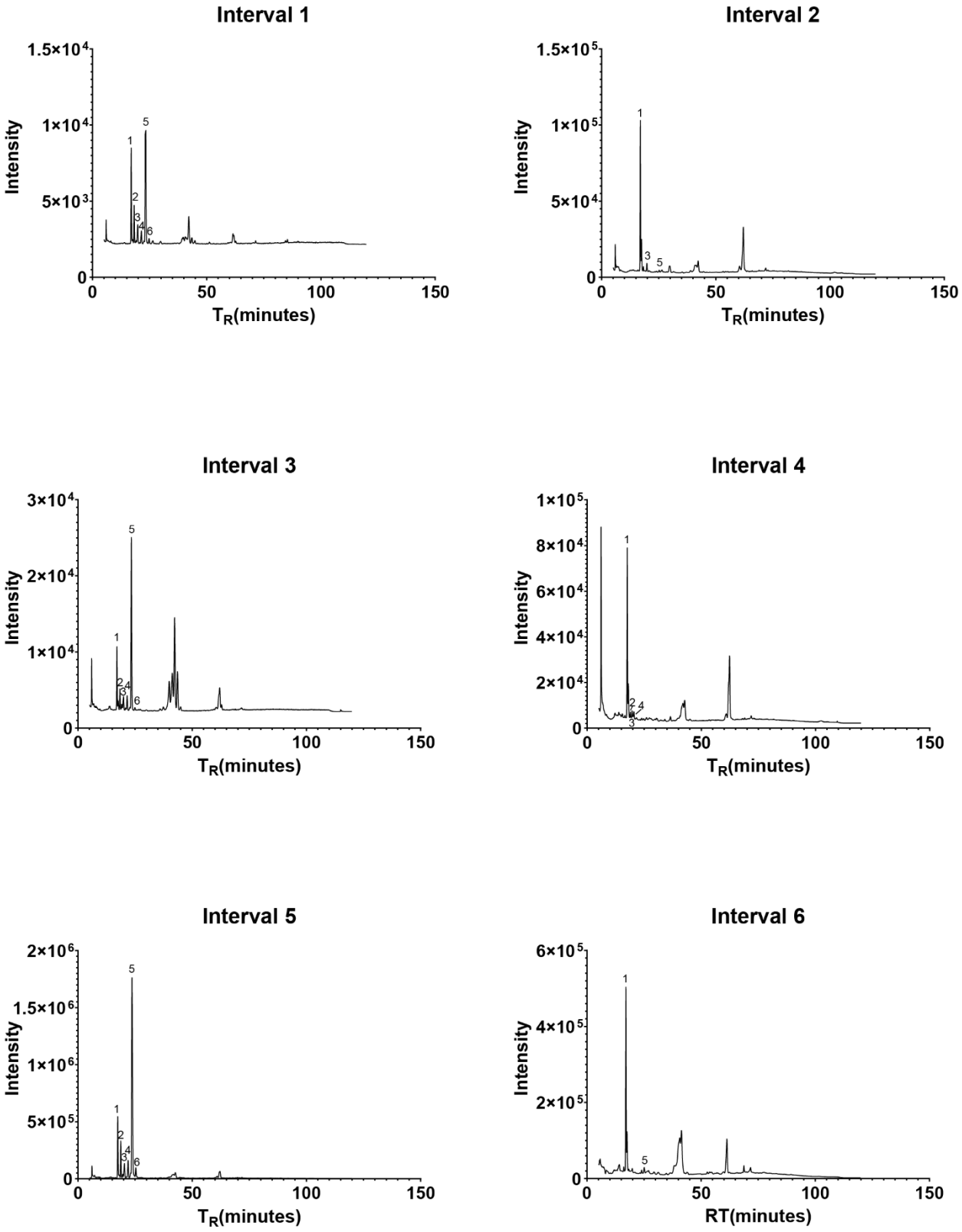


**Figure S1.** Chromatograms showing **1)** GDGT-0 (1302 m/z), **2)** GDGT-1 (1300 m/z), **3)** GDGT-2 (1298 m/z), **4)** GDGT-3 (1296 m/z), **5)** Crenarchaeol (1292 m/z), and **6)** Crenarchaeol′ (1292

m/z). These are representative of each of the six intervals in the Magadi core. Samples are total ion chromatographs that were collected on an Agilent 1260 series HPLC in tandem with an Agilent 6120 series single quadrupole MSD ionized using APCI.

| | Depth (mbs) | Age (ka) | % GDGT-0 | % GDGT-1 | % GDGT-2 | % GDGT-3 | % Cren | % Cren' | % 0/Cren | % 2/Cren | MI | [2]/[3] | Ca/Na | Bulk $\delta^{13}C_{OM}$ (‰) | % $LOI_{500}$ | %TOC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | *m/z*=1302 | *m/z*=1300 | *m/z*=1298 | *m/z*=1296 | *m/z*=1292 | *m/z*=1292 | | | | | | | | |
| Interval 1 | 32.61 | 14.94 | 34.1% | 6.6% | 3.4% | 2.6% | 51.5% | 1.8% | 39.9% | 6.2% | 0.19 | 1.30 | 0.07 | -21.9 | 14.1 | 19.7 |
| | 32.79 | 14.96 | 26.3% | 7.8% | 5.4% | 3.2% | 55.8% | 1.5% | 32.0% | 8.8% | 0.22 | 1.66 | 0.11 | -18.5 | 11.9 | 18.7 |
| | 33.03 | 14.99 | 40.4% | 12.1% | 10.4% | 2.2% | 34.0% | 1.0% | 54.3% | 23.4% | 0.41 | 4.63 | 0.11 | -18.8 | 17.1 | 17.2 |
| | 33.28 | 15.02 | 38.5% | 10.8% | 9.6% | 2.6% | 37.6% | 0.9% | 50.6% | 20.4% | 0.37 | 3.74 | 0.07 | - | 14.1 | 16.8 |
| | 33.55 | 15.05 | 31.4% | 7.9% | 5.4% | 3.1% | 50.9% | 1.3% | 38.1% | 9.6% | 0.24 | 1.72 | 0.08 | -17.7 | 13.6 | 17.4 |
| | 33.76 | 15.07 | 27.0% | 7.5% | 5.0% | 3.2% | 55.7% | 1.6% | 32.6% | 8.3% | 0.21 | 1.57 | 0.08 | -18.3 | 14.4 | 24.7 |
| | 34.06 | 15.10 | 26.2% | 8.0% | 5.5% | 3.3% | 55.8% | 1.4% | 31.9% | 8.9% | 0.23 | 1.67 | 0.07 | -18.7 | - | 18.1 |
| | 34.15 | 15.10 | 29.5% | 8.7% | 5.7% | 3.2% | 51.4% | 1.5% | 36.5% | 10.0% | 0.25 | 1.82 | 0.08 | -18.1 | 9.4 | 19.3 |
| | 35.07 | 15.45 | 22.6% | 7.8% | 4.9% | 3.0% | 60.4% | 1.5% | 27.2% | 7.4% | 0.20 | 1.63 | 0.10 | -16.8 | 11.6 | 19.2 |
| | 35.42 | 16.81 | 23.0% | 7.8% | 4.6% | 2.8% | 60.3% | 1.6% | 27.6% | 7.1% | 0.20 | 1.67 | 0.11 | -17.2 | 12.8 | 17.6 |
| | 35.67 | 17.77 | 23.9% | 7.9% | 4.1% | 2.9% | 59.6% | 1.6% | 28.7% | 6.5% | 0.20 | 1.43 | 0.10 | -17.9 | 12.1 | 18.5 |
| Interval 2 | 43.51 | 38.99 | 78.5% | 8.9% | 10.9% | 0.8% | 1.0% | 0.1% | 98.8% | 91.9% | 0.95 | 14.13 | 0.06 | -28.6 | - | - |
| | 43.55 | 39.05 | 81.1% | 8.3% | 8.9% | 0.6% | 1.0% | 0.1% | 98.7% | 89.5% | 0.94 | 15.60 | 0.17 | -28.1 | - | - |
| | 46.68 | 48.70 | 85.2% | 6.7% | 6.8% | 0.5% | 0.8% | 0.1% | 99.1% | 89.9% | 0.94 | 14.21 | 0.17 | -28.0 | 11.6 | 21.8 |
| | 46.96 | 50.00 | 81.1% | 8.8% | 8.5% | 0.5% | 1.1% | 0.1% | 98.6% | 88.3% | 0.94 | 16.94 | 0.12 | -28.6 | 13.5 | 21.8 |
| | 47.75 | 53.61 | 81.0% | 8.2% | 9.3% | 0.6% | 0.9% | 0.1% | 98.9% | 91.0% | 0.95 | 16.26 | 0.16 | -29.4 | 10.8 | 20.5 |
| | 48.08 | 55.11 | 81.3% | 7.6% | 9.5% | 0.7% | 0.8% | 0.1% | 99.1% | 92.6% | 0.96 | 13.77 | 0.19 | -29.5 | 11.5 | 16.0 |
| | 49.55 | 61.83 | 83.7% | 6.8% | 8.4% | 0.5% | 0.4% | 0.1% | 99.5% | 95.3% | 0.97 | 15.92 | 0.16 | -28.0 | 10.7 | 19.2 |
| | 49.68 | 62.45 | 82.9% | 7.7% | 8.2% | 0.4% | 0.7% | 0.1% | 99.2% | 92.7% | 0.96 | 21.68 | 0.12 | -27.3 | 3.9 | 20.4 |
| | 50.36 | 65.22 | 79.0% | 9.0% | 10.9% | 0.7% | 0.3% | 0.1% | 99.7% | 97.6% | 0.98 | 14.88 | 0.92 | -29.0 | 9.0 | 3.9 |
| | 58.74 | 97.72 | 84.9% | 7.5% | 6.4% | 0.2% | 1.0% | 0.1% | 98.8% | 86.3% | 0.93 | 28.86 | 0.00 | - | 35.5 | 19.0 |
| | 58.80 | 97.97 | 88.3% | 6.0% | 5.1% | 0.1% | 0.4% | 0.0% | 99.5% | 92.3% | 0.96 | 39.23 | 0.00 | -48.1 | - | 5.4 |
| | 59.06 | 99.04 | 90.7% | 4.5% | 4.6% | 0.1% | 0.2% | 0.0% | 99.8% | 96.1% | 0.98 | 50.56 | 0.57 | -64.2 | 36.8 | 60.6 |
| | 59.40 | 100.46 | 92.6% | 2.3% | 4.5% | 0.2% | 0.3% | 0.1% | 99.6% | 93.0% | 0.95 | 29.87 | 0.19 | -89.4 | 35.3 | 59.3 |
| | 62.06 | 106.05 | 86.9% | 3.6% | 8.7% | 0.2% | 0.5% | 0.1% | 99.4% | 94.1% | 0.95 | 45.63 | 0.21 | -28.1 | 19.4 | 29.5 |
| | 62.65 | 106.93 | 82.0% | 3.7% | 13.4% | 0.5% | 0.3% | 0.1% | 99.7% | 98.1% | 0.98 | 26.88 | 0.21 | -27.9 | 5.1 | 33.5 |
| | 64.52 | 109.73 | 77.2% | 5.0% | 17.1% | 0.4% | 0.3% | 0.1% | 99.6% | 98.4% | 0.98 | 46.24 | 0.24 | -31.0 | 5.1 | 11.5 |
| | 65.98 | 116.93 | 84.1% | 3.6% | 11.2% | 0.7% | 0.3% | 0.0% | 99.7% | 97.5% | 0.98 | 15.77 | 0.38 | -26.9 | 5.4 | 11.5 |
| | 67.82 | 129.05 | 90.5% | 4.4% | 4.7% | 0.4% | 0.0% | 0.0% | 100.0% | 100.0% | 1.00 | 10.91 | 0.18 | -24.7 | 10.0 | 15.2 |
| Interval 3 | 70.78 | 149.74 | 30.9% | 6.0% | 4.2% | 3.3% | 54.1% | 1.5% | 36.4% | 7.1% | 0.19 | 1.26 | 0.28 | -21.5 | - | 17.5 |
| | 70.86 | 150.43 | 23.6% | 9.3% | 5.1% | 4.6% | 54.9% | 2.6% | 30.1% | 8.4% | 0.25 | 1.09 | 0.28 | -21.4 | - | 11.0 |
| | 70.97 | 151.29 | 84.4% | 2.3% | 2.8% | 0.8% | 9.4% | 0.3% | 89.9% | 22.7% | 0.37 | 3.48 | 0.31 | -23.4 | - | 15.7 |
| | 71.08 | 152.17 | 75.4% | 2.8% | 3.0% | 3.0% | 15.5% | 0.4% | 82.9% | 16.0% | 0.35 | 1.00 | 0.19 | -22.4 | - | 14.3 |
| | 71.19 | 153.06 | 38.2% | 5.4% | 4.8% | 4.3% | 46.1% | 1.2% | 45.3% | 9.4% | 0.23 | 1.12 | 0.19 | -21.4 | 16.2 | 13.8 |
| | 73.70 | 173.42 | 24.2% | 5.9% | 5.5% | 5.2% | 57.9% | 1.4% | 29.5% | 8.7% | 0.22 | 1.07 | 0.23 | - | 7.2 | 10.1 |
| | 75.93 | 184.48 | 29.3% | 5.3% | 4.9% | 4.9% | 54.3% | 1.3% | 35.0% | 8.3% | 0.21 | 1.00 | 0.77 | -21.8 | 3.4 | 9.4 |
| | 77.32 | 185.23 | 90.1% | 3.9% | 5.5% | 0.2% | 0.4% | 0.1% | 99.6% | 93.8% | 0.96 | 36.73 | 0.34 | -24.4 | 0.0 | 19.8 |
| | 86.07 | 197.23 | 33.4% | 6.7% | 5.0% | 2.6% | 51.0% | 1.3% | 39.5% | 8.9% | 0.22 | 1.90 | 0.48 | -23.8 | 6.7 | 7.2 |
| Interval 4 | 94.92 | 315.79 | 95.3% | 1.2% | 3.0% | 0.2% | 0.2% | 0.0% | 99.8% | 93.7% | 0.95 | 12.54 | 0.19 | -25.4 | - | - |
| | 95.05 | 317.40 | 95.7% | 1.3% | 2.6% | 0.1% | 0.3% | 0.0% | 99.7% | 89.9% | 0.93 | 23.45 | 0.95 | -25.5 | - | - |
| | 95.15 | 317.50 | 92.4% | 3.5% | 3.7% | 0.2% | 0.3% | 0.0% | 99.7% | 92.4% | 0.96 | 22.81 | 0.58 | -27.0 | 5.5 | 24.8 |
| | 96.38 | 318.74 | 65.5% | 11.5% | 15.6% | 2.7% | 4.7% | 0.0% | 93.3% | 76.8% | 0.86 | 5.73 | 1.67 | - | 3.7 | 7.4 |
| Interval 5 | 103.16 | 323.77 | 57.3% | 3.4% | 3.8% | 1.7% | 32.7% | 1.1% | 63.7% | 10.4% | 0.21 | 2.18 | 0.41 | -25.0 | - | 20.9 |
| | 103.49 | 323.92 | 44.2% | 3.9% | 3.3% | 2.4% | 44.5% | 1.7% | 49.8% | 6.9% | 0.17 | 1.40 | 1.30 | -25.0 | 7.1 | 20.0 |
| | 103.79 | 324.05 | 17.6% | 7.7% | 4.3% | 4.4% | 62.8% | 3.2% | 21.9% | 6.4% | 0.20 | 0.97 | 0.52 | -18.1 | 11.7 | 21.2 |
| | 104.10 | 324.19 | 17.3% | 10.5% | 7.6% | 7.5% | 51.5% | 5.7% | 25.1% | 12.8% | 0.31 | 1.01 | 0.29 | -20.5 | 2.6 | 23.9 |
| Interval 6 | 119.64 | 391.05 | 45.1% | 9.5% | 31.3% | 7.9% | 5.7% | 0.5% | 88.8% | 84.7% | 0.89 | 3.95 | 0.20 | - | 8.2 | 15.7 |
| | 119.75 | 391.79 | 19.2% | 8.0% | 53.8% | 17.5% | 1.5% | 0.0% | 93.0% | 97.4% | 0.98 | 3.08 | 0.15 | - | 8.1 | 13.8 |
| | 121.66 | 403.66 | 52.0% | 11.6% | 28.2% | 7.4% | 0.8% | 0.1% | 98.6% | 97.4% | 0.98 | 3.81 | 0.92 | -24.3 | 7.4 | 9.9 |
| | 123.43 | 414.42 | 39.9% | 9.9% | 38.7% | 9.4% | 1.8% | 0.2% | 95.7% | 95.5% | 0.97 | 4.11 | 0.42 | -22.2 | 4.7 | 15.2 |
| | 123.82 | 416.86 | 92.5% | 3.6% | 3.4% | 0.2% | 0.3% | 0.1% | 99.7% | 92.6% | 0.96 | 16.85 | 0.47 | -25.6 | 11.4 | 12.7 |
| | 124.02 | 418.06 | 65.1% | 12.1% | 21.6% | 0.7% | 0.4% | 0.1% | 99.5% | 98.4% | 0.99 | 29.62 | | -22.1 | 6.3 | 10.1 |
| | 128.74 | 447.02 | 96.4% | 1.5% | 1.5% | 0.1% | 0.5% | 0.1% | 99.5% | 75.6% | 0.83 | 13.27 | 0.74 | - | 4.0 | 10.9 |
| | 129.77 | 453.32 | 83.8% | 14.6% | 1.1% | 0.1% | 0.3% | 0.1% | 99.6% | 77.3% | 0.97 | 15.71 | | -26.8 | 6.5 | 26.6 |
| | 129.84 | 453.73 | 83.8% | 14.7% | 1.1% | 0.1% | 0.3% | 0.1% | 99.7% | 81.6% | 0.98 | 8.54 | 0.15 | -25.2 | 6.5 | - |
| | 129.96 | 454.42 | 83.4% | 13.6% | 2.3% | 0.2% | 0.4% | 0.1% | 99.6% | 86.2% | 0.97 | 9.91 | | -27.3 | 4.1 | 24.5 |
| | 130.21 | 456.18 | 84.5% | 7.2% | 7.5% | 0.5% | 0.2% | 0.1% | 99.7% | 96.9% | 0.98 | 16.30 | | -28.2 | 20.3 | 6.8 |

**Table S1.** Table showing values in Magadi for GDGT relative abundances, index values, and bulk geochemistry. Additionally, indices related to methane cycling (i.e., % GDGT-0/cren, % GDGT-2/cren, [2]/[3], and MI).