Supplemental Table 2. Full spectral analysis results on both stable isotopes and growth rate time series of Ach-3 stalagmite. The dominant spectral for the respective proxy is marked in Bold.

Phase 3a (laminae 28-243)

δ18O

Rectangular 34-29, **25-21, 18**

Welsh I 34-29, **23-20**

Hanning *36-29*, **23-19**

Triangular *36-29*, **22-18**

Blackman Harris *39-29*, **22-18**

δ13C

Rectangular 41-36, 25, 21

Welsh I *41-32*, **23-21**

Hanning *41-32*, **23-20**

Triangular 38-34, **23-20**

Blackman Harris **23-19**

Growth Rate

Rectangular 30-26, 18, 14, 12

Welsh I 32-26, 19-18

Hanning 36-27, 19-18, 13-12

Triangular 34-26, 19-18, 13-11

Blackman Harris 34-26, 21-18, 13-12

Phase 2 (laminae 244-675)

δ18O

Rectangular 17.3

Welsh I **17.3-17.6**

Hanning **18-17**

Triangular **18-17**

Blackman Harris 18-17

δ13C

Rectangular **20-21**, 16-17, 14 yr

Welsh I **20-21**, 14 yr

Hanning **19-21**, 14 yr

Triangular **20-21**, 14 yr

Blackman Harris **20-21**, 14 yr

Growth Rate

Rectangular 39-33, 11.1

Welsh I 43-35

Hanning 43-34

Triangular 43-34

Blackman Harris 43-36

Phase 1 (laminae 676-925)

δ18O

Rectangular *37-26*, **18-17**

Welsh I *33-26*, **18-15**

Hanning *33-26*, **18-15**

Triangular *33-26*, **18-15**

Blackman Harris *33-26*, **18-15**

δ13C

Rectangular *29-25*, **21-19**, (15), (14)

Welsh I 29-25, **21-19**

Hanning 29-25, **21-19**

Triangular 29-25, **21-19**

Blackman Harris 30-26

Growth Rate

Rectangular  21-19, 15, 12

Welsh I 21-19, 15

Hanning 21-18, 13-11,

Triangular 21-19, 15, 12

Blackman Harris 21-19, 13-11