Supplemental tables with details on U-series dates from stalagmites TSAL-1 and YOK-G for manuscript "COnstructing Proxy-Record from Age models (COPRA)"

S.F.M. Breitenbach et al.

October 29, 2012

Table 1: Radiometric dates for stalagmite TSAL-1, dated in the Minnesota isotope laboratory, University of Minnesota. † δ^{234}U = ([^{234}U/^{238}U]$_{activity}$-1)×1000. ‡ $\delta^{234}U_{initial}$ was calculated based on ^{230}Th age (T), i.e., $\delta^{234}U_{initial}$=$\delta^{234}U_{measured}$ × el234×T. Corrected ^{230}Th ages assume the initial ^{230}Th/^{232}Th atomic ratio of 4.4±2.2×10^{-6}. Those are the values for a material at secular equilibrium, with the bulk earth ^{232}Th/^{238}U value of 3.8. The errors are arbitrarily assumed to be 50%. * B.P. stands for "Before Present" where the "Present" is defined as the year 1950 A.D. The dating uncertainty is 2 sigma.

Sample	**Distance from top (mm)**	^{238}**U (ppb)**	^{232}**Th (ppt)**	^{230}**Th/**^{232}**Th (atomic x10**$^{-6}$**)**	δ^{234}**U**†	^{230}**Th/**^{238}**U (activity)**	^{230}**Th Age (yrs, uncorr.)**	^{230}**Th Age (yrs, corr.)**	$\delta^{234}U^{\ddagger}_{initial}$ **(corr.)**	^{230}**Th Age*** **(yrs BP)**
U5	4.53±0.3	42.4±0.1	468±9	524±11	220.1±2.0	0.3504±0.0021	36528±273	36270±328	244±2	36208±328
U1	13.0±1.0	47.0±0.1	16±1	17961±1232	212.5±1.8	0.3726±0.0019	39586±257	39578±257	238±2	39518±257
U6	31.3±0.8	53.2±0.1	4±1	75286±18915	219.4±2.9	0.3631±0.0015	38118±221	38116±221	244±3	38054±221
U7	47.7±0.8	60.6±0.1	46±1	8118±256	208.5±1.7	0.3700±0.0015	39414±204	39396±204	233±2	39334±204
U4	68.0±1.5	28.8±0.1	19±1	9410±559	209.0±2.8	0.3792±0.0028	40570±377	40554±377	234±3	40494±377
hiatus	72.25±0.3									
U8	75.5±1.0	68.9±0.1	684±14	668±14	200.9±1.6	0.4023±0.0011	43944±171	43708±238	227±2	43646±238
U2	92.3±1.0	35.8±0.1	36±1	6823±245	205.2±2.1	0.4149±0.0024	45410±337	45386±337	233±2	45326±337
U9	141.9±0.8	31.0±0.03	15±1	13538±984	206.6±1.8	0.4067±0.0023	44250±317	44239±317	234±2	44177±317
U10	194.7±0.8	31.2±0.03	4±1	56042±15710	205.9±2.1	0.4107±0.0023	44823±322	44820±322	234±2	447582±322
U11	244.2±0.8	42.8±0.05	11±1	27108±2933	199.4±1.7	0.4086±0.0020	44850±276	44844±276	226±2	44782±276
U12	296.9±0.8	46.2±0.04	6±1	54781±10468	202.3±1.6	0.4104±0.0017	44953±235	44950±235	230±2	44888±235
U3	351.7±1.0	32.7±0.1	20±5	11232±2645	207.9±6.2	0.4143±0.0093	45207±1279	45193±1279	236±7	45133±1279

Table 2: Radiometric dates for stalagmite YOK-G. YOK-G was dated in the Radiogenic Isotope Laboratory at the University of New Mexico. The dating uncertainty is 2 sigma.

Sample	**Distance from top (mm)**	**^{238}U (ppb)**	**^{232}U (ppt)**	**^{230}Th/^{232}Th (activity)**	**^{230}Th/^{238}U (act., error $\times 10^{-5}$)**	**δ^{234}U (measured)**	**δ^{234}U (initial)**	**Age (yrs, uncorr.)**	**Age (yrs, corr.)**	**Calendar Age (yrs AD)**
modern	0.0									2006
1	6.0	5200.1±4.7	270.0±57.4	31.7±7	0.001±3.054	467.4±1.47	467.5±1.47	40±2	39±2	1967
2	27.0	4496.9±9.4	86.5±73.2	136.4±116	0.001±4.251	467.4±1.47	467.5±1.47	64±3	64±3	1942
3	47.0	5153.9±4.8	57.7±60.0	331.38±345	0.001±3.118	482.7±1.48	482.8±1.48	89±2	89±2	1917
4	68.0	6644.5±6.8	27.1±50.3	1109.6±2057	0.001±2.010	487.9±1.49	488.0±1.49	109±1	109±1	1897
5	87.0	8352.4±6.6	6.8±41.9	6470.6±39632	0.002±1.435	464.3±1.46	464.5±1.46	129±1	129±1	1877
6	107.5	5783.8±5.4	58.9±39.4	630.9±422	0.002±2.041	485.1±1.48	485.3±1.49	154±2	154±2	1852
7	124.5	7772.9±3.8	30.5±50.1	1886.7±3099	0.002±2.541	489.2±1.49	489.4±1.49	178±2	178±2	1828
8	141.5	17083.1±20.3	116.9±60.0	1206.0±619	0.003±2.211	507.8±1.51	508.1±1.51	195±2	195±2	1811
9	165.0	6416.0±5.2	3.7±66.0	15952.1±281458	0.003±3.143	491.3±1.49	491.6±1.49	223±2	223±2	1783
10	185.0	6753.5±5.0	6753.5±57.0	2016.7±3322	0.003±2.732	485.6±1.48	486.0±1.48	248±2	248±2	1758
11	203.0	7932.2±7.1	7932.2±61.0	5051.1±17887	0.004±2.655	476.7±1.48	477.1±1.48	265±2	265±2	1741
12	221.0	8387.4±9.9	8387.4±55.2	21475.2±258268	0.004±2.486	474.4±1.47	474.8±1.47	285±2	285±2	1721
13	241.5	10094.6±24.7	10094.6±47.3	15310.1±86993	0.004±2.452	480.1±1.48	480.5±1.48	304±2	304±2	1702
14	265.0	8099.4±14.2	8099.4±47.0	2287.1±2173	0.005±3.331	481.0±1.48	481.5±1.48	337±2	337±2	1669
15	285.0	8629.1±15.1	8629.1±39.9	1982.3±1241	0.005±2.898	471.2±1.47	471.7±1.47	355±2	355±2	1651
16	310.0	5674.0±18.1	5674.0±66.3	1130.4±937	0.005±5.743	450.5±1.86	451.0±1.86	392±4	392±4	1614
17	325.0	6237.6±10.0	6237.6±53.2	7679.5±30144	0.005±4.965	470.6±1.47	471.1±1.47	405±4	405±4	1601
18	343.5	7440.0±11.0	7439.6±56.1	1253.1±664	0.006±3.355	469.0±1.47	469.6±1.47	434±3	434±3	1572