Supplementary Materials for:

Thermodynamics control precipitation in NE Mexico on orbital to millennial timescales

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Cave setting and speleothem sample

Cueva Bonita (23°N, 99°W; 1071 m above sea level) is located in the highlands of the Sierra Madre Oriental in the northeast Mexican state of Tamaulipas (Fig. S1). Regional geology is dominated by thick (>2000 m) Lower Cretaceous limestone (Gary and Sharp, 2006), uplifted by normal and thrust faults (Ford, 2000). The cave has ~20-25 m of overburden, a single relatively narrow entrance, and a shallow soil profile with 30 cm of dark brown clay loam soil. The vegetation above the cave is dominated by C_3 plants, including the *Podocarpus reichei*, *Liquidambar styraciflua*, *Quercus sartorii*, *Quercus germana*, *Clethra pringlei*, *Magnolia tamaulipana*, *Acer skutchii*,*Cercis canadensis*, and diverse epiphytic orchid species. The cave resides within the northernmost tropical cloud forest, with an annual mean precipitation of 1800 mm/yr (Grams & Faaborg, 1997) and annual mean exterior temperature of 23.3°C (Fig. S1).

An ongoing cave monitoring campaign has been conducted to better understand how the overlying climate is recorded in speleothem calcite. Relative humidity and temperature fluctuations have been monitored using an Onset HOBO Relative Humidity-Temperature logger, collecting data every 2 hours. Additionally, daily CO_2 measurements were made using a handheld Vaisala GM-70 CO_2 monitor attached to a 12 Volt lantern battery, which typically lasted 1-3 months. Over a 27-month period, relative humidity remained constant at 100% (Fig. S6). The temperature varied only slightly from the mean of 17.5°C with a subtle drop (< 0.5°C) during boreal winter (Fig. S6). These stable conditions suggest calcite was likely deposited in isotopic equilibrium and is therefore reflective of the isotopic composition of precipitation. Monitoring revealed a seasonal cycle in cave pCO_2, ranging from atmospheric concentrations (~400 ppm) during winter, upwards to 1251 ppm during the warmer summer months (Fig. S6). This change in pCO_2 suggests there is likely a seasonal cyclicity in speleothem $\delta^{13}C$ as has been shown in other studies on the effects of changing cave ventilation on speleothem chemistry (Frisia et al., 2011). This ventilation related fractionation is not likely to significantly impact speleothem $\delta^{13}C$ variations on interannual timescales or longer.

Stalagmite CB2 was collected on a slope approximately 30 meters from the cave entrance on a second level, approximately 15 meters below the first level. Stalagmite CB2 was inactive when collected, but drip water was collected from around the sample in spring 2016 and 2017. Drip waters demonstrate an average $\delta^{18}O$ of -4.17 ± 0.9 ‰ (n=15) similar to the annual average $\delta^{18}O$ of overlying precipitation samples collected in 2018 (mean = -3.97 ± 2.7, n=48). CB2 is a 78 cm long stalagmite composed of translucent grey and beige calcite. No acicular patterns were detected by hand lens, and XRD analysis conducted at ~ 15cm intervals showed CB2 is 100% calcite. CB2 exhibits a predominantly aggregational stratigraphic stacking pattern as well as a globular morphostratigraphic units throughout, suggesting relatively consistent drip rates and calcite saturation (Martín-Chivelet et al., 2017). The speleothem sampled is 100% calcite and temperatures remain relatively constant throughout time, therefore we assume $\delta^{18}O$ variations are dominantly driven by changes in precipitation $\delta^{18}O$.

Interpretation of geochemical proxies

During periods of reduced local water balance (i.e. reduced water in the critical zone, P-ET), Prior Calcite Precipitation is enhanced due to an increase in air-filled voids on the cave-ceiling, in the epikarst, and overlying soil (*26*). Air-filled voids have reduced pCO_2 in comparison to infiltrating water, which enhances CO_2 degassing and the precipitation of calcite (*27*). Enhanced CO_2 degassing leads to the preferential loss of ^{12}C in the percolating waters, increasing the $\delta^{13}C$ values in the remaining solution and speleothem. Additionally, when calcite precipitates it preferentially uptakes Ca^{2+} leaving the remaining solution and speleothem enriched in the divalent ions (Mg^{2+}, Sr^{2+}, Ba^{2+}). Therefore, we interpret the covariation in $\delta^{13}C$ and Mg/Ca in our record to be reflective of prior calcite precipitation, primarily controlled by local water balance, not necessary precipitation amount. It is important to note during the transition out of the Pleistocene the increasing trend in Mg/Ca is anomalous compared to $\delta^{13}C$ ($r = 0.14$, $p = 0.04$) and $\delta^{18}O$, suggesting trace elements do not match our other proxies on orbital timescales.

Mg/Ca values diverge from the stable isotope record during the glacial-interglacial transition, with an increase from mean glacial concentrations of 30 mmol/mol to Holocene concentrations of ~40 mmol/mol (Fig. 2). The increase in Mg/Ca ratios could be reflective of dryer conditions during the Holocene, however, we interpret the rise in Mg/Ca ratios as a result of non-hydrologic controls on speleothem trace element ratios. During the glacial, we find overall agreement between Mg/Ca and $\delta^{13}C$, indicative that hydrologically sensitive PCP is likely an important controlling mechanism especially on millennial timescales. The divergence between these proxies during the deglacial and Holocene, however, may be explained by the competing influence of temperatures on Mg partitioning into calcite. Cave temperatures are reflective of mean annual surface temperatures (*28*), therefore as temperatures increased from the glacial through mid-Holocene the temperature dependent partition coefficient for Mg was likely affected (*29*). If we assume a 5°C interglacial-glacial temperature correction for Mg/Ca, modeling studies demonstrate this change could impart up to a 23% increase in Mg/Ca (*29*), consistent with the observed shift in CB2.

Modern Precipitation Isotope Systematics

All precipitation samples collected from June 2018 to May 2019 fall on the Global Meteoric Water Line with $\delta^{18}O$ values ranging from -14.03‰ to 0.22‰ and δD values ranging from -98.3‰ to 6.7‰ (VSMOW) (Fig. S4). In total 48 samples were collected and the mean $\delta^{18}O_{precip}$ is -3.97 ± 2.7‰. Monthly-averaged precipitation amount from a nearby weather station and $\delta^{18}O$ values demonstrate a strong correlation ($r^2 = 0.88$) (Fig. S4), suggesting that precipitation $\delta^{18}O$ is reflective of precipitation amount on seasonal timescales. However, these

results do not directly confirm the dominance of the amount effect on interannual or longer timescales, and we cannot rule out additional influence of other factors, such as moisture source region, which could enhance or diminish this signal. HYSPLIT analyses, however, demonstrate that the moisture at our field site is dominantly sourced from the Gulf of Mexico and Caribbean Sea (Fig. S1). Even during boreal winter, the Pacific contributes a relatively insignificant amount of moisture (< 5 g/kg m/s). Paleoclimate model simulations (MIROC-ESM, CNRM-CM5, MPI-ESM-P, GISS-E2-R) conducted as part of the Paleoclimate Model Intercomparison Project 3 (PMIP3) (Braconnot et al., 2012) do not demonstrate any major re-organization of wind patterns or changes in seasonality of precipitation (JJAS still dominant) during the mid-Holocene and Last Glacial Maximum (Fig. S2, Fig. S3). To investigate interannual $\delta^{18}O$ variability, we analyzed results from the reanalysis nudged isotope enabled IsoGSM model (Yoshimura et al., 2008) for our study region. A spatial correlation between annual precipitation $\delta^{18}O$ from IsoGSM with GPCC v.7 precipitation (Fig. S4) shows a clear negative correlation over NE Mexico, further supporting interpretation of $\delta^{18}O$ primarily as a rainfall amount signal. Therefore, we conclude that precipitation, and hence stalagmite, $\delta^{18}O$ at our site is likely reflective of local and regional precipitation amount rather than changes in moisture source.

Correction for Seawater $\delta^{18}O$

The ultimate moisture source of any precipitation is seawater. In order to correct precipitation for glacial-interglacial shifts in $\delta^{18}O_{sw}$, we subtracted interpolated $\delta^{18}O_{sw}$ values (Waelbroeck et al., 2002) from CB2 data (Fig. S7). This ultimately decreases glacial-interglacial $\delta^{18}O_{speleothem}$ values but does not play a huge role in mitigating or amplifying millennial scale variability.

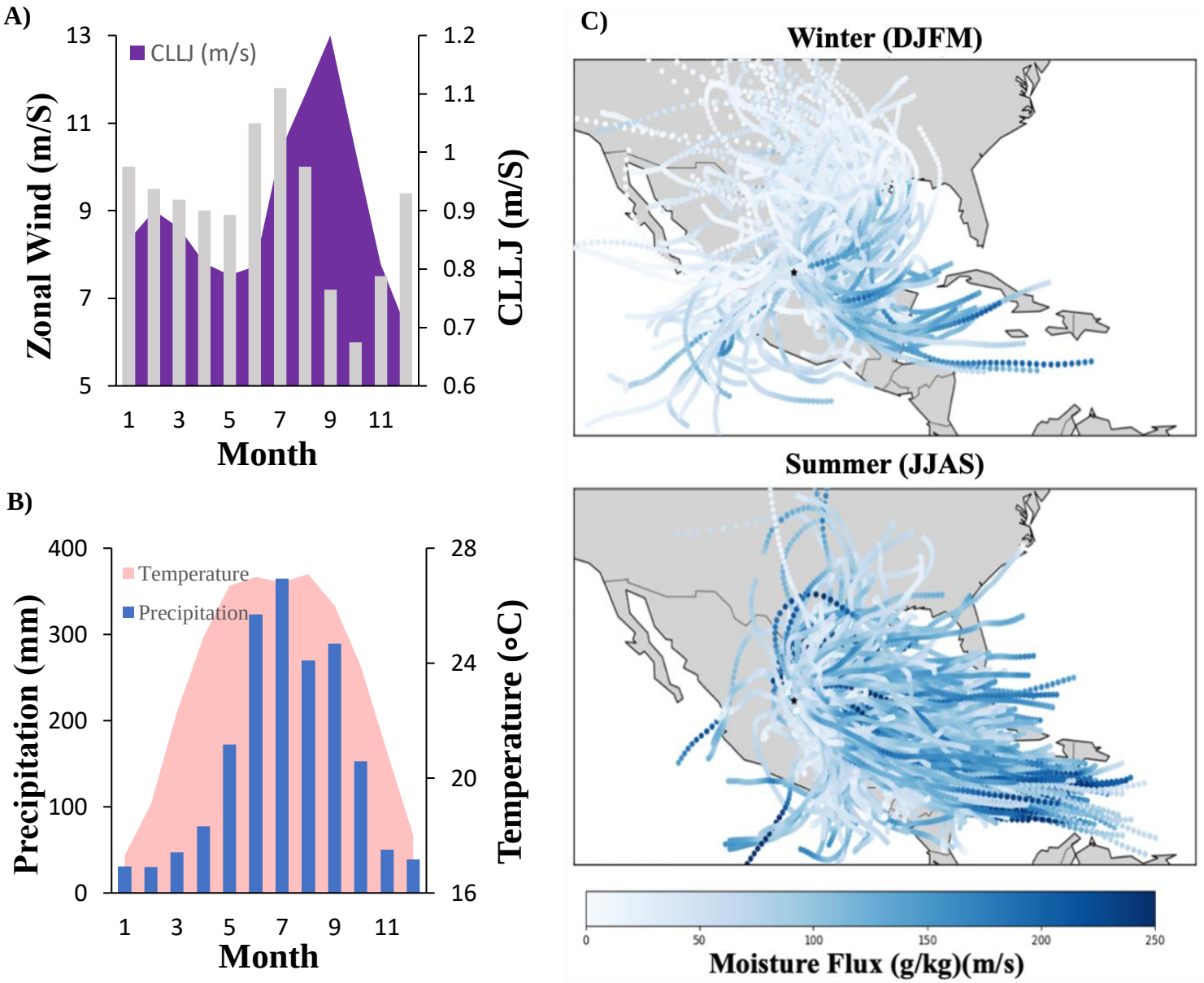


Fig. S1. Modern precipitation patterns of NE Mexico. A) Monthly average precipitation and temperature above cave site from www.weatherbase.com. **B)** Monthly average zonal winds in the Caribbean Basin and strength of Caribbean Low-Level Jet (Mestas-Nuñez et al., 2007). **C)** Moisture flux trajectory analysis conducted with NOAA HYSPLIT model (Stein et al., 2015) in conjunction with the python package PYSPLIT (Cross, 2015) for increased computational efficiency. Back-trajectory air trajectories yielding moisture at Cueva Bonita (n=3600) demonstrate the dominant moisture source is from the Gulf of Mexico and Caribbean Sea during both boreal winter and summer.

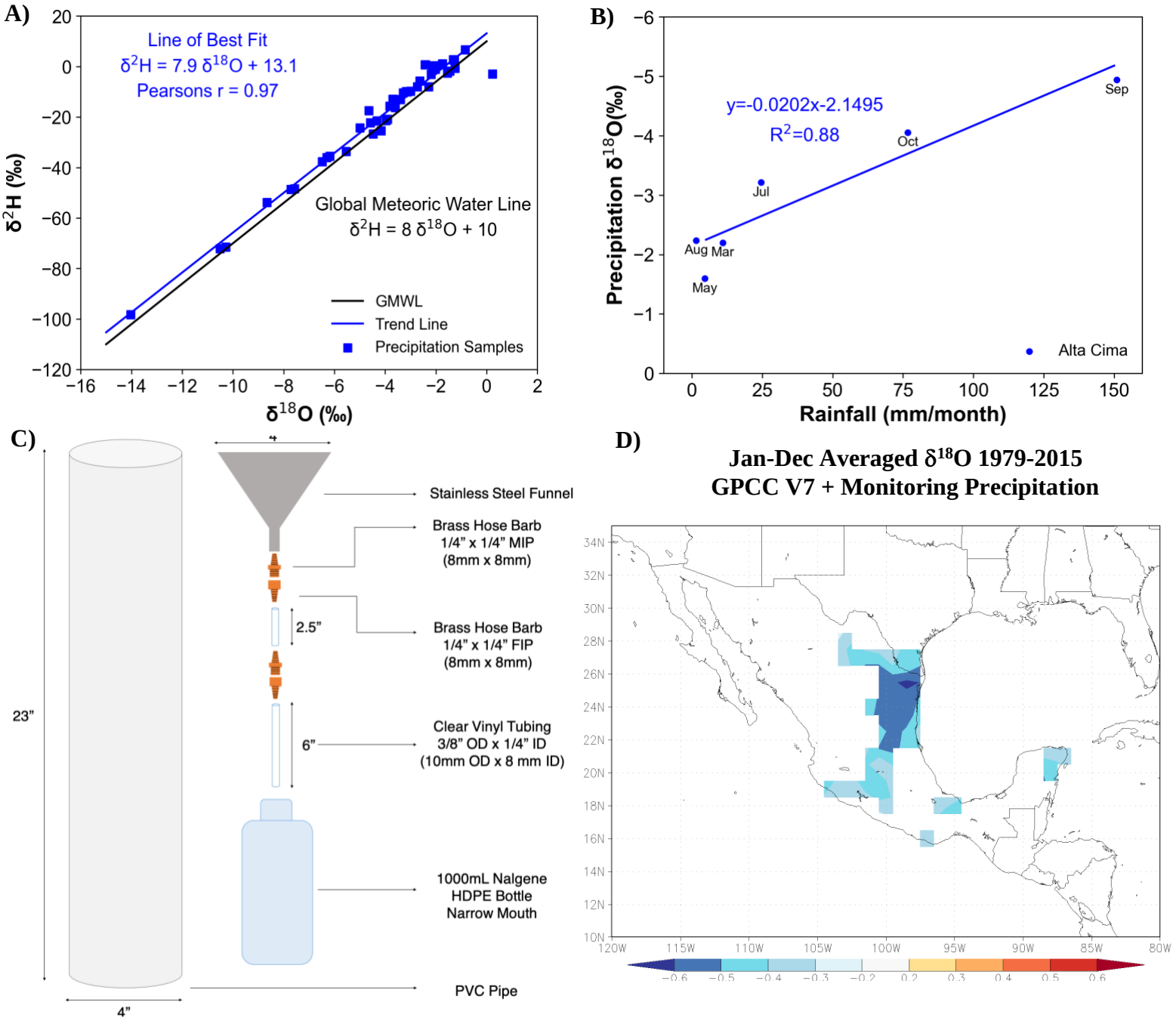
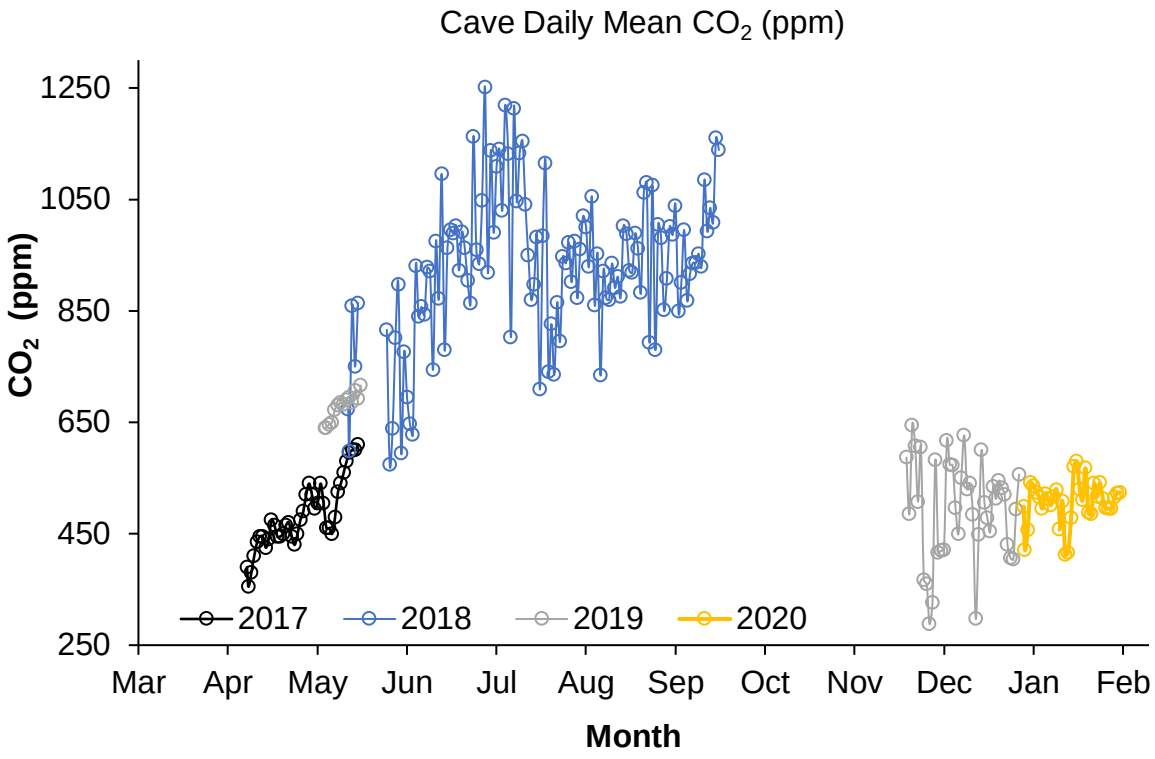


Fig. S2. Isotopic composition of precipitation A) Precipitation $\delta^{18}O$ and $\delta^{2}H$ for 48 precipitation samples collected above the cave near the city of Alta Cima. Almost all samples fall on the GMWL. **B)** Monthly averaged precipitation from a nearby weather station (Gómez-Farías, 6km from Cueva Bonita, source:www.weatherbase.com) with precipitation $\delta^{18}O$ collected above the cave. **C)** Design of precipitation collectors built to limit wind flow and atmospheric interaction. This system relies on a series of barbs and tubing to provide a more cost-effective alternative to mineral-oil precipitation collectors. All parts were assembled and glued together using hot glue and/or gorilla glue. In a 7-day trial where collectors were left in the sun in 80°F weather, no evaporation was detected. **D)** Spatial correlation of annual weighted mean precipitation $\delta^{18}O$ from IsoGSM gridpoint nearest Cueva Bonita with annual GPCC v7 precipitation (1979-2015), illustrating a negative correlation between precipitation oxygen isotope ratios and regional precipitation amount in our study area.

A)



B)

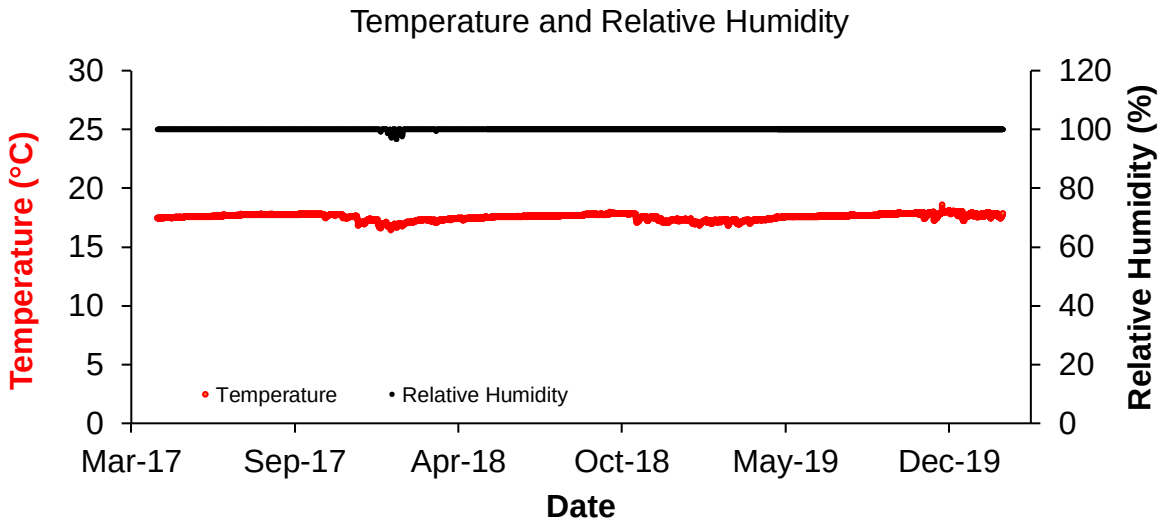


Fig. S3. Cave temperature, relative humidity from 2017-2020. (A) Daily mean CO_2 for Cueva Bonita recorded every 3-12 hours using a hand-held Vaisala GM-70 CO_2 monitor attached to a 12 Volt lantern battery. Higher pCO_2 levels are noted during summer, compared to all other seasons. Colors indicate various years of data. **(B)** Temperature and relative humidity in Cueva Bonita recorded from April 2017 until February 2020. Measurements were made every 2 hours using HOBO loggers. Temperature remains relatively constant at 17 and relative humidity at 100%.

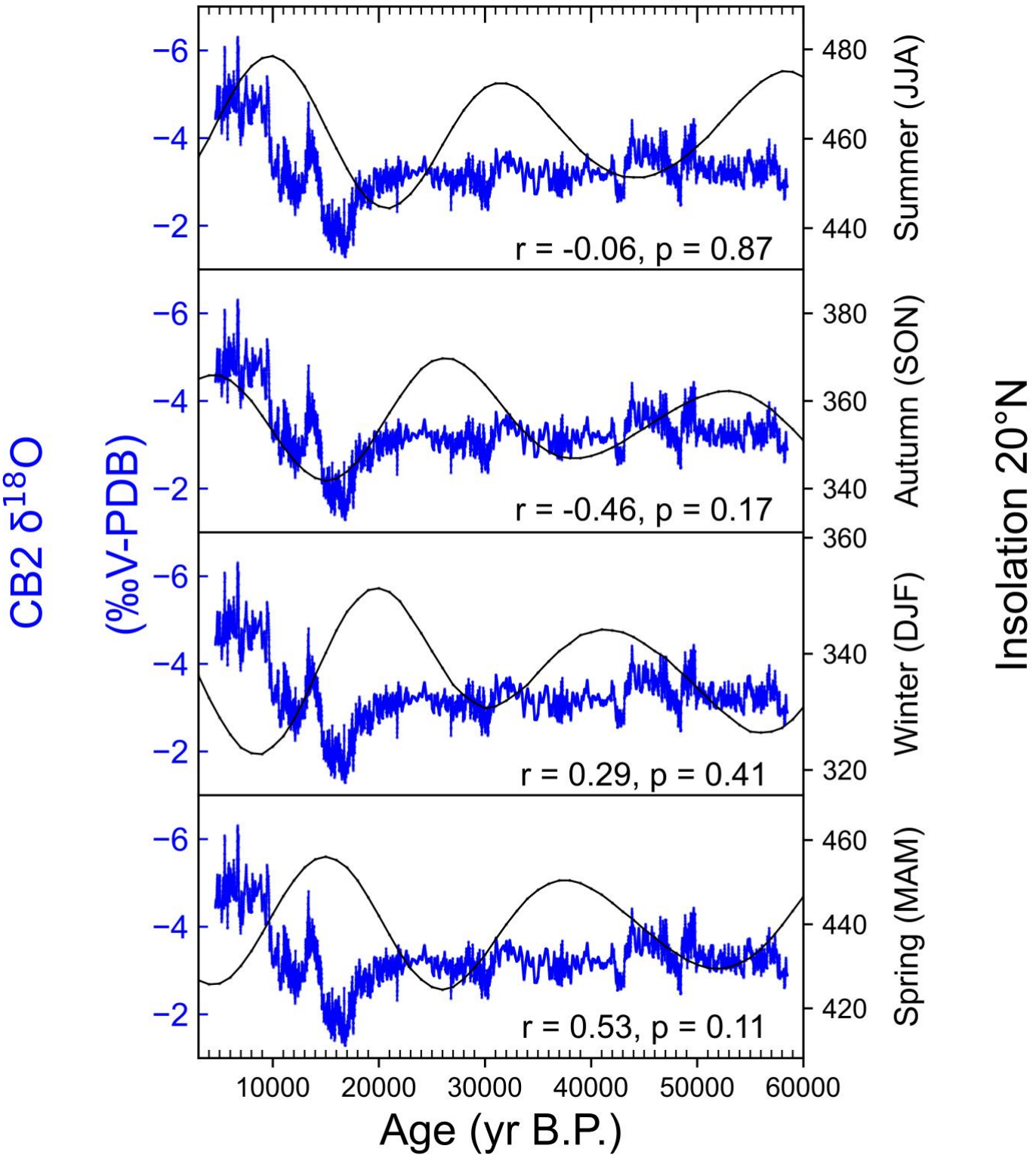


Fig. S4. CB2 $\delta^{18}O$ (blue) compared to various seasons of insolation. While autumn and summer insolation appear to have a strong negative correlation to CB2 $\delta^{18}O$ (positive correlation to rainfall) over the Pleistocene – Holocene transition, this co-variation does not continue over the late Pleistocene. We also do not see a significant correlation to Winter (DJF) or Spring (MAM) insolation.

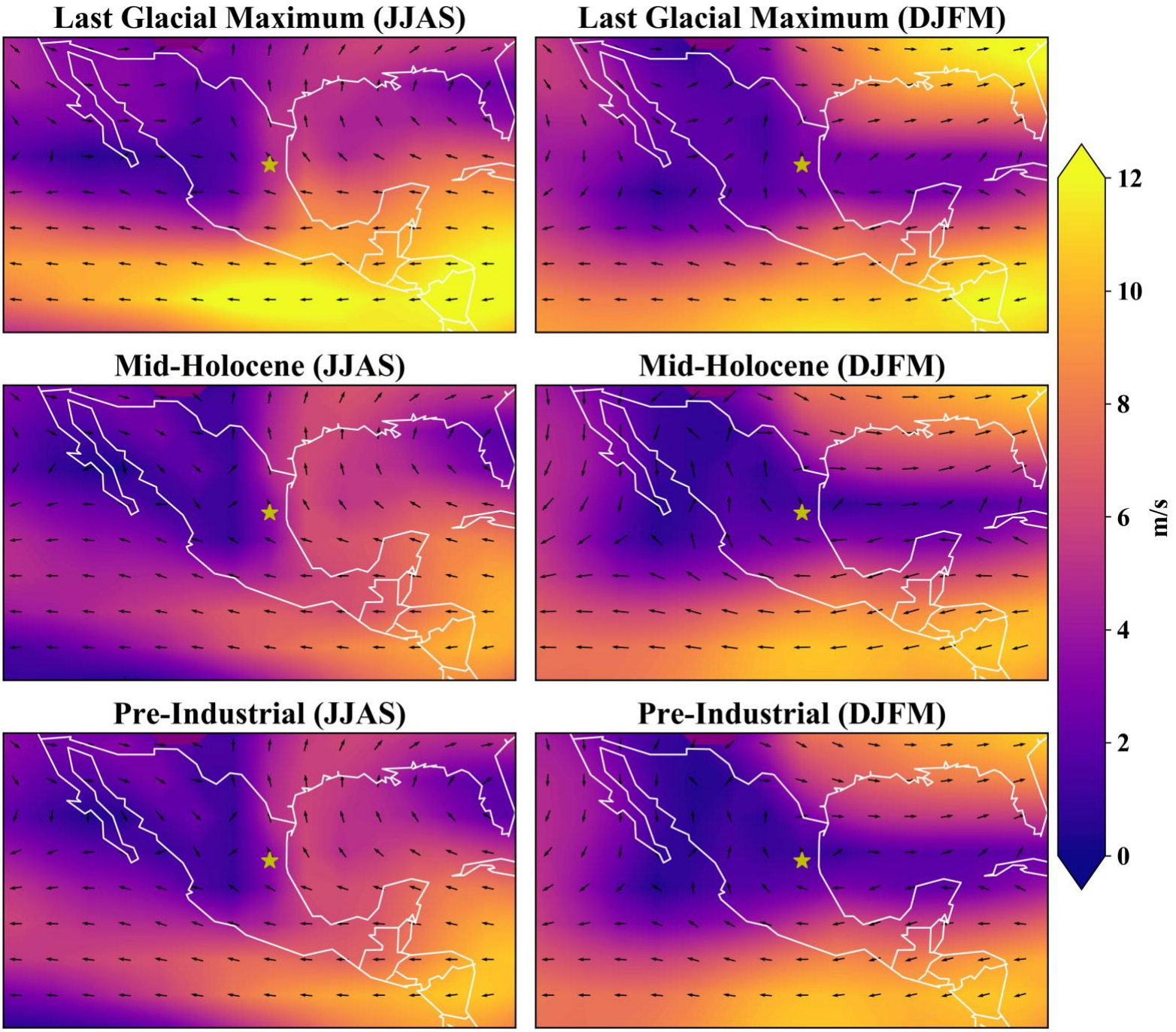


Fig. S5. Summer and winter low level winds during the Last Glacial Maximum, Mid-Holocene and Pre-Industrial Period. Summer (left) and winter (right) low-level wind direction and magnitude during the LGM (top), Mid-Holocene (mid) and Pre-Industrial (bottom) time periods from the NASA model GISS-E2-R (Braconnot et al., 2012). The magnitude is illustrated by color, direction is indicated by arrow. Winds were noticeably stronger during the Last Glacial Maximum (top), indicated by yellow, however, there is no major changes in in wind direction with respect to the Mid-Holocene or Pre-Industrial period that would suggest an increased proportion of rainfall from the Pacific.

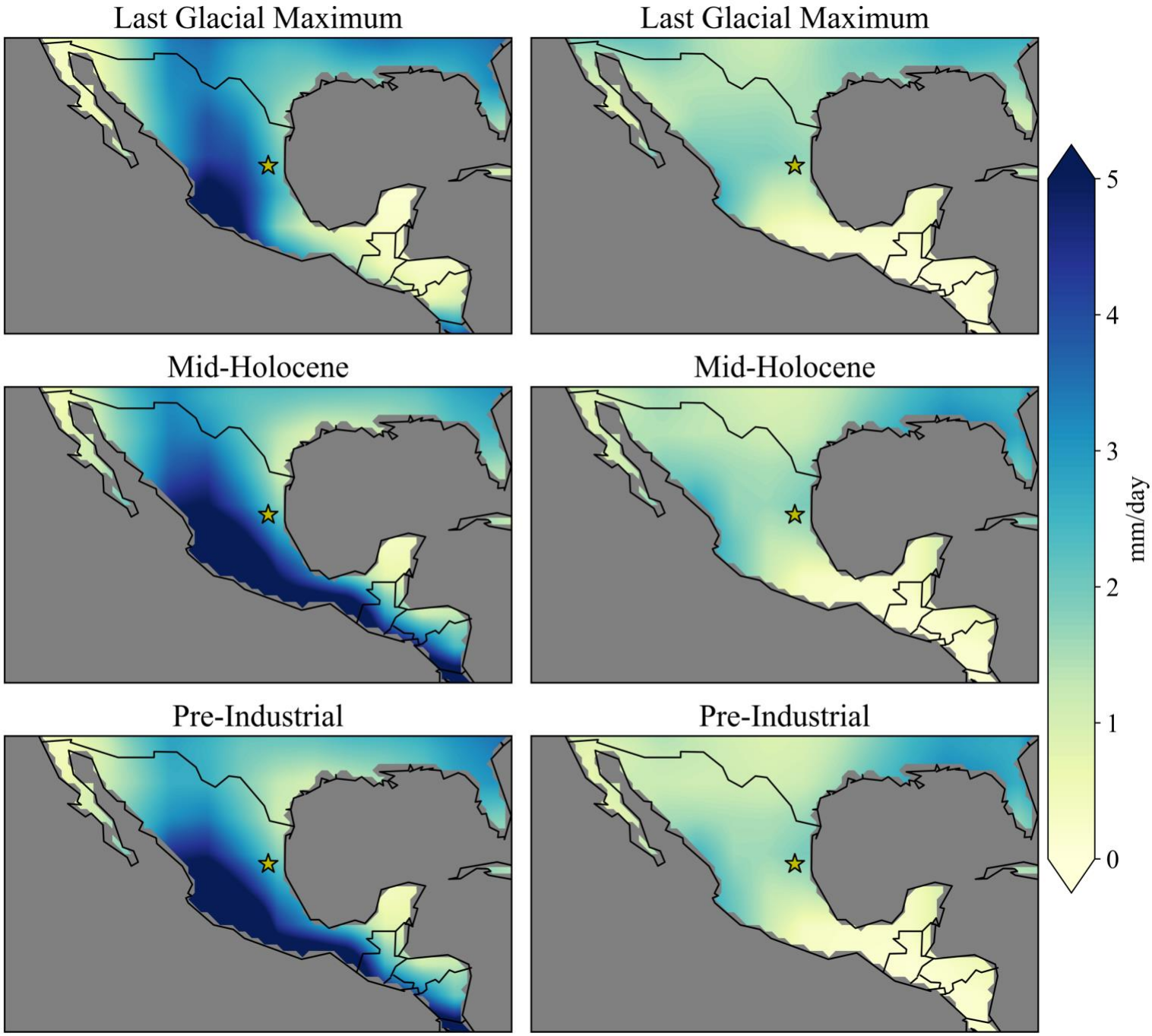


Fig. S6. Summer and winter precipitation during the Last Glacial Maximum, Mid-Holocene and Pre-Industrial Period. Precipitation results from PMIP3 Model GISS-E2-R (Braconnot et al., 2012). Summer (left) and winter (right) precipitation during the LGM (top), Mid-Holocene (mid) and Pre-Industrial (bottom) time periods. The model demonstrates increased precipitation throughout time (LGM<MI<PI), however, summer remains the wet season throughout all time periods.

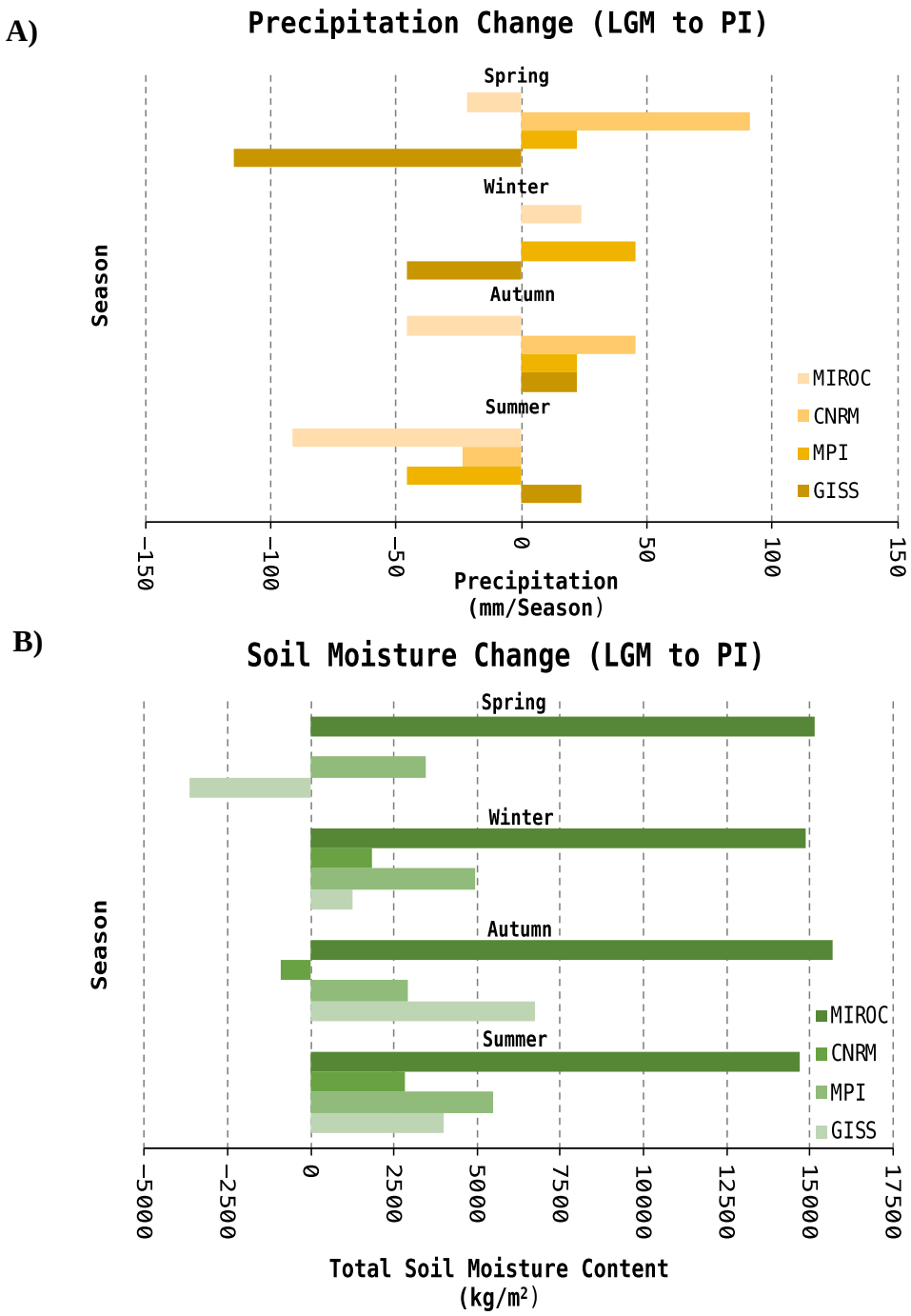


Fig. S7. Precipitation and soil-moisture comparison between the Pre-Industrial to Last Glacial Maximum. (A) Comparison of LGM precipitation and **(B)** soil moisture during the LGM and Pre-industrial for 4 of the best performing PMIP3 models during Spring (MAM), Winter (DJF), Autumn (SON) and Summer (JJA) averaged over 22°N-24°N and 98°W-100°W. It is unclear if precipitation increased or decreased during the LGM compared to PI. However, all models show increases in total soil moisture, suggestive of decreased evaporation during the LGM.

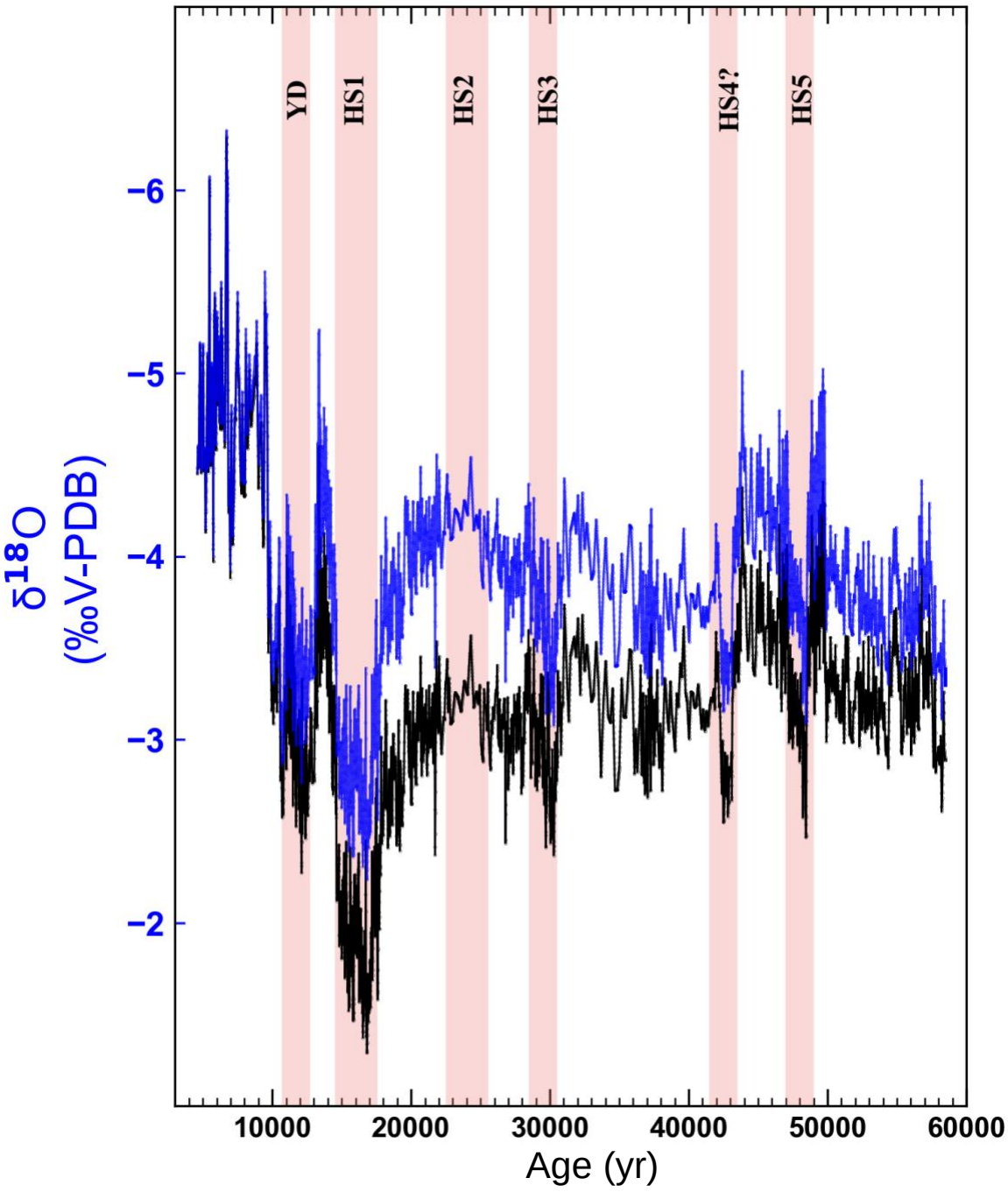


Fig. S8. Comparison of raw CB2 $\delta^{18}O$ with mean-seawater subtracted CB2 $\delta^{18}O$. Mean seawater interglacial-glacial $\delta^{18}O$ from Waelbroeck et al. (2002) subtracted from raw CB2 $\delta^{18}O_{speleothem}$ shown in black, to yield corrected CB2 $\delta^{18}O_{speleothem}$ shown in blue. Corrected $\delta^{18}O_{speleothem}$ was used in all figures, and all other speleothem records used for comparison were also corrected using values from Waelbroeck et al. (2002). Correcting our record for changes in mean seawater $\delta^{18}O$ does not affect the magnitude of change in millennial scale events. Furthermore, changes in $\delta^{18}O_{seawater}$ during the Holocene were minimal, reflected in the overlap of corrected (blue) and uncorrected (black) values.

Table S1. Uranium-thorium data for Stalagmite CB2

Depth (mm)	^{238}U (ng/g)	^{232}Th (ng/g)	$d^{234}U$ (‰)	($^{232}Th/^{238}U$) (Activity)	$^{230}Th/^{232}Th$ ppm atomic	Uncorrected Age (yr)	Corrected age (yr)	$d^{234}Uinit$ (‰)
3	39 ± 1	3639 ± 95	132 ± 2	0.1115 ± 0.0069	19.1 ± 1.2	11298 ± 742	5187 ± 1399	134 ± 2
14	38 ± 1	87 ± 2	128 ± 3	0.0584 ± 0.0012	406.9 ± 10.2	5801 ± 133	5587 ± 136	130 ± 3
27	45 ± 1	159 ± 4	129 ± 2	0.0611 ± 0.0019	271.9 ± 9.2	6057 ± 203	5761 ± 207	131 ± 2
45	52 ± 1	7262 ± 146	146 ± 2	0.1529 ± 0.0036	17.5 ± 0.4	15565 ± 395	6428 ± 1848	149 ± 2
85	63 ± 1	70 ± 2	174 ± 2	0.1144 ± 0.0006	1648.9 ± 33.3	11154 ± 63	11019 ± 64	179 ± 2
90	59 ± 1	156 ± 3	225 ± 3	0.1219 ± 0.0006	735.6 ± 7.5	11402 ± 68	11180 ± 74	232 ± 3
118	52 ± 1	360 ± 7	191 ± 3	0.1255 ± 0.0006	290.9 ± 1.7	12111 ± 68	11629 ± 104	197 ± 3
149	51 ± 1	368 ± 8	200 ± 2	0.1361 ± 0.0009	296.8 ± 2.8	13079 ± 91	12576 ± 123	208 ± 2
158	51 ± 1	130 ± 3	213 ± 2	0.1401 ± 0.0008	874.6 ± 11.6	13331 ± 85	13113 ± 90	221 ± 2
179	50 ± 1	276 ± 6	236 ± 2	0.1482 ± 0.0007	423.4 ± 2.9	13882 ± 70	13492 ± 93	245 ± 2
203	41 ± 1	88 ± 2	240 ± 2	0.1529 ± 0.0007	1124.2 ± 16.9	14300 ± 74	14106 ± 78	250 ± 2
235	47 ± 1	166 ± 4	230 ± 2	0.1623 ± 0.0008	730.4 ± 7.2	15373 ± 87	15100 ± 95	240 ± 2
314	22 ± 1	109 ± 3	415 ± 2	0.2211 ± 0.0011	699.6 ± 11.3	18370 ± 103	18051 ± 114	437 ± 2
344	22 ± 1	609 ± 12	447 ± 2	0.2649 ± 0.0017	154.2 ± 1	21825 ± 153	20414 ± 299	474 ± 2
376	30 ± 1	130 ± 3	355 ± 3	0.2601 ± 0.0013	945.3 ± 10.1	23029 ± 138	22733 ± 144	378 ± 3
382	22 ± 1	140 ± 3	386 ± 2	0.2903 ± 0.0017	727.3 ± 8.6	25342 ± 175	24950 ± 185	415 ± 2
413	18 ± 1	171 ± 4	378 ± 6	0.3171 ± 0.0021	528.3 ± 4.8	28166 ± 249	27610 ± 265	409 ± 6
447	27 ± 1	952 ± 19	398 ± 2	0.3521 ± 0.002	157.6 ± 1	31187 ± 212	29320 ± 405	433 ± 2
483	39 ± 1	327 ± 7	330 ± 2	0.3341 ± 0.0016	628 ± 3.9	31160 ± 178	30642 ± 198	360 ± 2
507	29 ± 1	3827 ± 77	313 ± 4	0.4449 ± 0.0065	53.4 ± 0.8	44348 ± 806	36973 ± 1654	348 ± 5
533	36 ± 1	2619 ± 53	318 ± 2	0.4241 ± 0.0026	92.6 ± 0.6	41621 ± 309	37618 ± 824	354 ± 2
556	34 ± 1	7114 ± 144	313 ± 2	0.5263 ± 0.0074	39.5 ± 0.6	54588 ± 977	42665 ± 2592	354 ± 3
577	24 ± 1	2209 ± 44	298 ± 2	0.4789 ± 0.0034	81.6 ± 0.6	49253 ± 446	44048 ± 1098	338 ± 3
582	26 ± 1	3505 ± 70	297 ± 3	0.5013 ± 0.0039	60.1 ± 0.5	52171 ± 533	44738 ± 1549	338 ± 3
603	34 ± 1	1364 ± 28	270 ± 5	0.4674 ± 0.0044	183.3 ± 1.7	49166 ± 620	46843 ± 755	308 ± 5
624	28 ± 1	2793 ± 56	263 ± 2	0.4901 ± 0.0029	79.4 ± 0.5	52548 ± 406	46916 ± 1163	300 ± 2
662	30 ± 1	2723 ± 55	254 ± 2	0.5019 ± 0.0031	87.6 ± 0.6	54687 ± 448	49427 ± 1109	292 ± 2
666	36 ± 1	2122 ± 43	238 ± 2	0.4819 ± 0.0025	129 ± 0.7	52811 ± 365	49339 ± 753	274 ± 2
690	40 ± 1	1006 ± 20	286 ± 2	0.5011 ± 0.0019	316.1 ± 1.3	52770 ± 280	51328 ± 384	330 ± 2
709	49 ± 1	1377 ± 28	274 ± 2	0.5106 ± 0.0033	289.2 ± 1.9	54704 ± 459	53094 ± 546	318 ± 3
730	44 ± 1	921 ± 19	240 ± 5	0.5071 ± 0.0037	388.5 ± 3	56215 ± 603	54974 ± 641	281 ± 6
754	34 ± 1	8140 ± 163	270 ± 1	0.6207 ± 0.0046	40.8 ± 0.3	71084 ± 733	56987 ± 2962	318 ± 3
774	31 ± 1	4339 ± 88	361 ± 3	0.6268 ± 0.0053	70.5 ± 0.6	65165 ± 750	57731 ± 1638	426 ± 4

All reported errors are 2σ. Errors for ^{238}U and ^{232}Th concentrations are estimated to be ±1% due to uncertainties in spike concentration; analytical uncertainties are smaller. Corrected ages are corrected for initial ^{230}Th assuming an initial $^{230}Th/^{232}Th$ of 10.5 ± 2 ppm. Decay constants for ^{230}Th and ^{234}U are from Cheng et al. (2013) decay constant for ^{238}U is 1.55125×10^{-10} yr^{-1} (Jaffey et al., 1971).

Table S2: Precipitation from Alta Cima, Mexico and cave water $\delta^{18}O$ and δD data.

ID	Oxygen (VSMOW)	Hydrogen (VSMOW)	Date (m/d/yr)	Location	Type	Site
KW1	-1.31	2.74	5/14/18	Alta Cima	Precipitation	N/A
KW2	-2.29	-8.00	6/7/18	Alta Cima	Precipitation	N/A
KW3	-10.51	-72.17	6/21/18	Alta Cima	Precipitation	N/A
KW4	-14.03	-98.30	6/22/18	Alta Cima	Precipitation	N/A
KW5	-5.55	-33.62	6/24/18	Alta Cima	Precipitation	N/A
KW6	-10.28	-71.49	6/27/18	Alta Cima	Precipitation	N/A
KW7	-3.61	-16.12	6/28/18	Alta Cima	Precipitation	N/A
KW8	-1.25	-0.69	7/6/18	Alta Cima	Precipitation	N/A
KW9	-3.40	-12.97	7/7/18	Alta Cima	Precipitation	N/A
KW10	-4.99	-24.24	7/8/18	Alta Cima	Precipitation	N/A
KW11	-3.29	-10.32	8/5/18	Alta Cima	Precipitation	N/A
KW12	-3.97	-21.32	8/6/18	Alta Cima	Precipitation	N/A
KW13	-4.16	-25.34	8/12/18	Alta Cima	Precipitation	N/A
KW14	-0.85	6.72	8/13/18	Alta Cima	Precipitation	N/A
KW15	-1.46	-1.77	8/16/18	Alta Cima	Precipitation	N/A
KW16	-1.28	2.43	8/17/18	Alta Cima	Precipitation	N/A
KW17	-2.19	-3.02	8/25/18	Alta Cima	Precipitation	N/A
KW18	-2.74	-7.99	8/27/18	Alta Cima	Precipitation	N/A
KW19	-2.02	-1.01	8/28/18	Alta Cima	Precipitation	N/A
KW20	-2.64	-5.71	8/30/18	Alta Cima	Precipitation	N/A
KW21	-4.58	-22.23	9/7/18	Alta Cima	Precipitation	N/A
KW22	-4.48	-26.60	9/9/18	Alta Cima	Precipitation	N/A
KW23	-3.00	-9.69	9/10/18	Alta Cima	Precipitation	N/A
KW24	-4.33	-21.54	9/11/18	Alta Cima	Precipitation	N/A
KW25	-8.66	-53.86	9/13/18	Alta Cima	Precipitation	N/A
KW26	-6.31	-36.05	9/15/18	Alta Cima	Precipitation	N/A
KW27	-6.19	-35.53	9/16/18	Alta Cima	Precipitation	N/A
KW28	-2.13	-1.42	9/18/18	Alta Cima	Precipitation	N/A
KW29	-3.82	-15.74	9/21/18	Alta Cima	Precipitation	N/A
KW30	-3.91	-20.89	9/23/18	Alta Cima	Precipitation	N/A
KW31	-3.14	-9.97	9/27/18	Alta Cima	Precipitation	N/A
KW32	-3.17	-9.92	9/29/18	Alta Cima	Precipitation	N/A
KW33	-2.06	0.20	10/2/18	Alta Cima	Precipitation	N/A
KW34	-2.05	0.30	10/3/18	Alta Cima	Precipitation	N/A
KW35	-3.71	-12.92	10/7/18	Alta Cima	Precipitation	N/A
KW36	-3.56	-13.07	10/9/18	Alta Cima	Precipitation	N/A
KW37	-3.68	-12.96	10/11/18	Alta Cima	Precipitation	N/A
KW38	-3.70	-13.01	10/15/18	Alta Cima	Precipitation	N/A
KW39	-7.72	-48.65	10/16/18	Alta Cima	Precipitation	N/A
KW40	-7.57	-48.34	10/17/18	Alta Cima	Precipitation	N/A
KW41	-6.48	-37.64	10/26/18	Alta Cima	Precipitation	N/A
KW42	-4.64	-17.46	11/28/18	Alta Cima	Precipitation	N/A
KW43	-1.75	0.76	3/20/19	Alta Cima	Precipitation	N/A
KW44	-2.41	0.74	3/21/19	Alta Cima	Precipitation	N/A
KW45	-2.44	0.77	3/22/19	Alta Cima	Precipitation	N/A
KW46	-1.74	1.06	4/30/19	Alta Cima	Precipitation	N/A
KW47	0.22	-2.87	5/1/19	Alta Cima	Precipitation	N/A
KW48	-1.55	-2.54	5/3/19	Alta Cima	Precipitation	N/A
KW94	-2.85	-16.83	5/10/18	Cueva Bonita	Cave pool	D2-Pool
KW95	-4.10	-20.64	5/10/18	Cueva Bonita	Drip water	D1
KW96	-3.96	-20.36	5/10/18	Cueva Bonita	Drip water	D2
KW97	-3.89	-18.26	5/10/18	Cueva Bonita	Drip water	D3 - Multi
KW98	-3.05	-20.22	5/10/18	Cueva Bonita	Drip water	D4
KW99	-4.80	-23.27	5/10/18	Cueva Bonita	Drip water	D5
KW100	-5.50	-29.77	5/10/18	Cueva Bonita	Drip water	D6
KW101	-3.24	-15.36	5/10/18	Cueva Bonita	Drip water	Back room
KW118	-5.30	-27.77	5/4/19	Cueva Bonita	Drip water	D1
KW119	-3.51	-12.66	5/5/19	Cueva Bonita	Drip water	D2
KW120	-4.27	-19.30	5/6/19	Cueva Bonita	Cave pool	D2-Pool
KW121	-5.11	-26.52	5/7/19	Cueva Bonita	Drip water	D4
KW122	-3.44	-12.64	5/8/19	Cueva Bonita	Drip water	D5
KW123	-4.18	-18.53	5/9/19	Cueva Bonita	Drip water	D6
KW124	-5.47	-29.54	5/10/19	Cueva Bonita	Drip water	D7

Table S3: CB2 Speleothem $\delta^{18}O$, $\delta^{13}C$ and Mg/Ca ratios

ID	Depth (mm)	Age (years B.P.)	$\delta^{13}C$ (V-PDPB)	$\delta^{18}O$ (V-PDPB)	Mg/Ca (mmol/mol)
CB2-1	0.5	4607	-8.51	-4.44	
CB2-2	1	4652	-8.54	-4.61	48.99
CB2-3	1.5	4698	-8.67	-4.47	
CB2-4	2	4744	-9.28	-4.84	39.28
CB2-5	2.5	4791	-8.78	-5.18	
CB2-6	3	4837	-8.5	-4.73	38.94
CB2-7	3.5	4883	-9.48	-4.43	
CB2-8	4	4929	-9.91	-4.81	34.56
CB2-9	4.5	4975	-10.04	-4.93	
CB2-10	5	5020	-10.04	-5.17	38.15
CB2-11	5.5	5064	-9.24	-4.45	
CB2-12	6	5108	-9.47	-4.58	40.1
CB2-13	6.5	5151	-9.78	-4.55	
CB2-14	7	5192	-9.16	-4.1	43.1
CB2-15	7.5	5233			
CB2-16	8	5272	-9.53	-4.67	37.2
CB2-17	8.5	5309	-9.61	-4.88	
CB2-18	9	5345	-9.64	-5.12	37.35
CB2-19	9.5	5380	-8.93	-4.89	
CB2-20	10	5412	-9.22	-4.41	41.55
CB2-21	10.5	5442	-10.01	-5.24	
CB2-22	11	5470	-10.31	-6.08	30.72
CB2-23	11.5	5496	-9.79	-5.95	
CB2-24	12	5519	-9.32	-4.65	40.41
CB2-25	12.5	5540	-9.3	-4.59	
CB2-26	13	5558	-10.32	-4.96	32.24
CB2-27	13.5	5573	-10.2	-4.48	
CB2-28	14	5585	-10.32	-4.53	30.92
CB2-29	14.5	5595	-10.03	-4.71	
CB2-30	15	5605	-9.88	-4.96	38.84

CB2-31	15.5	5614	-10.15	-4.93	
CB2-32	16	5622	-10.04	-5.03	35.39
CB2-33	16.5	5630	-10.03	-4.89	
CB2-34	17	5637	-9.41	-5.18	39.59
CB2-35	17.5	5645	-9.13	-4.54	
CB2-36	18	5651	-10.19	-4.82	34.65
CB2-37	18.5	5658	-10.7	-4.95	
CB2-38	19	5664	-10.61	-4.8	32.88
CB2-39	19.5	5670	-9.71	-4.52	
CB2-40	20	5676	-9.56	-4.64	40.08
CB2-41	20.5	5681	-9.13	-4.9	
CB2-42	21	5687	-9.16	-5.04	40.55
CB2-43	21.5	5693			
CB2-44	22	5699	-9.68	-4.9	38.91
CB2-45	22.5	5705	-9.95	-4.83	
CB2-46	23	5711	-10.21	-4.76	39.07
CB2-47	23.5	5717	-10.02	-5.03	
CB2-48	24	5723	-9.91	-4.64	38.84
CB2-49	24.5	5730	-10.4	-4.85	
CB2-50	25	5737	-11.14	-4.25	28.41
CB2-51	25.5	5745	-11.44	-3.97	
CB2-52	26	5753	-11.43	-3.98	24.38
CB2-53	26.5	5762	-11.3	-4.62	
CB2-54	27	5771	-11.19	-4.87	25.33
CB2-55	27.5	5781	-10.48	-4.46	
CB2-56	28	5793	-10.66	-5.06	32.24
CB2-57	28.5	5808	-11.24	-4.84	
CB2-58	29	5824	-11.02	-5.34	25.86
CB2-59	29.5	5841	-11.44	-5.24	
CB2-60	30	5861	-10.79	-5.45	29.66
CB2-61	30.5	5881	-10.2	-4.99	
CB2-62	31	5904	-10.7	-5.06	30.13
CB2-63	31.5	5927	-11.21	-4.6	
CB2-64	32	5952	-10.96	-4.58	27.46

CB2-65	32.5	5979	-10.96	-5.13	
CB2-66	33	6006	-10.61	-5.32	30.67
CB2-67	33.5	6035	-10.36	-5.18	
CB2-68	34	6064	-9.77	-5.06	36.58
CB2-69	34.5	6094	-9.33	-4.8	
CB2-70	35	6126	-9.85	-5.02	32.83
CB2-71	35.5	6158	-10.03	-5.19	
CB2-72	36	6190	-10.21	-4.72	30.64
CB2-73	36.5	6223	-10.02	-4.78	
CB2-74	37	6257	-10.06	-4.68	33.61
CB2-75	37.5	6291	-10.07	-5.08	
CB2-76	38	6326	-10.58	-5.52	27.92
CB2-77	38.5	6361	-10.48	-4.61	
CB2-78	39	6396	-9.84	-5.24	32.09
CB2-79	39.5	6431	-10.53	-4.87	
CB2-80	40	6466	-11.39	-4.9	22.25
CB2-81	40.5	6501	-10.4	-4.71	
CB2-82	41	6536	-9.49	-4.72	37.61
CB2-83	41.5	6571	-9.2	-4.59	
CB2-84	42	6605	-9.77	-4.68	32.35
CB2-85	42.5	6640	-9.36	-5.13	
CB2-86	43	6673	-10.67	-6.15	27.08
CB2-87	43.5	6707	-11.03	-6.3	
CB2-88	44	6739	-10.64	-5.92	27.61
CB2-89	44.5	6771	-10.43	-6.08	
CB2-90	45	6802	-9.9	-4.99	34.12
CB2-91	45.5	6834	-10.1	-4.31	
CB2-92	46	6868	-9.61	-4.23	37.85
CB2-93	46.5	6903	-9.58	-4.44	
CB2-94	47	6940	-9.14	-4.24	41.33
CB2-95	47.5	6979	-9.75	-3.84	
CB2-96	48	7019	-9.87	-4.56	37.12
CB2-97	48.5	7061	-9.8	-4.8	
CB2-98	49	7105	-9.31	-4.26	36.23

CB2-99	49.5	7150	-8.98	-4.05	
CB2-100	50	7196	-9.55	-4.24	32.1
CB2-101	50.5	7244	-10.17	-4.37	
CB2-102	51	7293	-10.52	-4.76	27.82
CB2-103	51.5	7343	-10.39	-4.74	
CB2-104	52	7395	-9.83	-4.99	34.19
CB2-105	52.5	7448	-10.16	-5.05	
CB2-106	53	7502	-10.18	-5.41	27.31
CB2-107	53.5	7557	-10.69	-4.99	
CB2-108	54	7613	-10.56	-4.91	25.97
CB2-109	54.5	7670	-9.71	-4.64	
CB2-110	55	7728	-9.86	-4.42	33.1
CB2-111	55.5	7787	-9.66	-4.34	
CB2-112	56	7846	-9.46	-4.87	35.31
CB2-113	56.5	7907	-9.62	-4.37	
CB2-114	57	7968	-9.55	-4.33	34.82
CB2-115	57.5	8030	-9.38	-4.34	
CB2-116	58	8093	-9.93	-5.2	34.48
CB2-117	58.5	8156	-10.02	-4.73	
CB2-118	59	8219	-9.43	-4.58	36.77
CB2-119	59.5	8283	-9.94	-4.74	
CB2-120	60	8348	-10.77	-5.04	32.57
CB2-121	60.5	8413	-10.61	-4.8	
CB2-122	61	8478	-10.56	-4.71	28.37
CB2-123	61.5	8544	-10.37	-4.8	
CB2-124	62	8609			28.66
CB2-125	62.5	8675	-10.49	-4.88	
CB2-126	63	8742	-11.23	-4.99	23.75
CB2-127	63.5	8808	-11.46	-4.93	
CB2-128	64	8874	-11.41	-5.18	21.55
CB2-129	64.5	8940	-10.44	-4.74	
CB2-130	65	9006	-9.79	-4.35	34.34
CB2-131	65.5	9072	-10.99	-4.62	
CB2-132	66	9138	-10.62	-4.64	24.21
CB2-133	66.5	9204	-10.8	-4.74	

CB2-134	67	9269	-10.06	-4.4	33.59
CB2-135	67.5	9334	-10.1	-4.05	
CB2-136	68	9399	-9.56	-4.11	35.42
CB2-137	68.5	9463	-9.59	-5.41	
CB2-138	69	9527	-9.92	-5.13	31.03
CB2-139	69.5	9590	-10.3	-5.15	
CB2-140	70	9652	-10.3	-4.55	29.47
CB2-141	70.5	9714	-8.77	-3.45	
CB2-142	71	9776	-9.37	-3.82	36.52
CB2-143	71.5	9837	-9.45	-4.01	
CB2-144	72	9896	-9.2	-3.5	38.06
CB2-145	72.5	9955	-9.94	-3.14	
CB2-146	73	10014	-9.88	-3.33	32.23
CB2-147	73.5	10071	-9.67	-3.07	
CB2-148	74	10127	-9.78	-3.32	30.42
CB2-149	74.5	10183	-9.58	-3.2	
CB2-150	75	10237	-9.44	-3.41	35.05
CB2-151	75.5	10290	-9.65	-3.5	
CB2-152	76	10342	-9.77	-3.13	33.47
CB2-153	76.5	10392	-10.16	-3.47	
CB2-154	77	10442	-10.03	-3.53	28.25
CB2-155	77.5	10490	-10.14	-3.84	
CB2-156	78	10537	-10.09	-3.77	32.63
CB2-157	78.5	10582	-8.22	-2.77	
CB2-158	79	10626	-7.83	-2.88	52.82
CB2-159	79.5	10668	-7.85	-2.92	
CB2-160	80	10709	-7.91	-2.56	47.65
CB2-161	80.5	10748	-7.88	-2.73	
CB2-162	81	10786	-7.87	-2.58	46.79
CB2-163	81.5	10821	-7.85	-2.88	
CB2-164	82	10855	-8.59	-3.14	39.52
CB2-165	82.5	10887	-8.92	-3.17	
CB2-166	83	10918	-9.61	-3.31	33.43
CB2-167	83.5	10946	-9.36	-3.16	
CB2-168	84	10972	-9.4	-2.99	35

CB2-169	84.5	10997	-9.93	-3.32	
CB2-170	85	11019	-9.66	-2.74	35.92
CB2-171	85.5	11040	-10.25	-4.01	
CB2-172	86	11059	-10.36	-3.97	28.03
CB2-173	86.5	11078	-10.21	-3.8	
CB2-174	87	11095	-10.4	-3.7	28.18
CB2-175	87.5	11112	-10.9	-3.73	
CB2-176	88	11127	-10.56	-3.53	26.75
CB2-177	88.5	11142	-10.46	-3.83	
CB2-178	89	11155	-10.89	-3.97	25.97
CB2-179	89.5	11168	-10.88	-3.66	
CB2-180	90	11179	-9.88	-3	32.39
CB2-181	90.5	11190	-10.35	-3.25	
CB2-182	91	11201	-10.39	-3.27	29.65
CB2-183	91.5	11212	-10.4	-3.36	
CB2-184	92	11222	-10.41	-3.53	32.3
CB2-185	92.5	11231	-10.05	-2.97	
CB2-186	93	11241	-10.27	-3.03	32.07
CB2-187	93.5	11250	-10.4	-3.08	
CB2-188	94	11260	-9.95	-2.93	31.03
CB2-189	94.5	11268	-10.33	-3.11	
CB2-190	95	11277	-10.88	-3.52	23.6
CB2-191	95.5	11286	-10.71	-3.59	
CB2-192	96	11294	-10.67	-3.45	25.26
CB2-193	96.5	11302	-10.65	-3.83	
CB2-194	97	11310	-10.6	-3.15	27.16
CB2-195	97.5	11318	-10.88	-3.22	
CB2-196	98	11325	-10.8	-3.57	23.84
CB2-197	98.5	11333	-10.72	-3.31	
CB2-198	99	11340	-10.73	-3.43	23.56
CB2-199	99.5	11347	-10.66	-2.88	
CB2-200	100	11355	-10.61	-2.99	24.78
CB2-201	100.5	11362	-10.99	-2.87	
CB2-202	101	11369	-10.98	-2.94	21.33

CB2-203	101.5	11375	-10.87	-3.06	
CB2-204	102	11382	-10.02	-2.95	25.48
CB2-205	102.5	11389	-10.25	-3.22	
CB2-206	103	11396	-10.14	-3.53	28.24
CB2-207	103.5	11402	-10.5	-3.14	
CB2-208	104	11409	-10.61	-3.42	26.77
CB2-209	104.5	11416	-9.82	-2.98	
CB2-210	105	11422	-10.64	-3.27	23.63
CB2-211	105.5	11429	-11.02	-3.42	
CB2-212	106	11436	-11.12	-3.55	20.48
CB2-213	106.5	11442	-11.11	-3.39	
CB2-214	107	11449	-11.44	-3.18	20.91
CB2-215	107.5	11456	-11.08	-3.48	
CB2-216	108	11463	-10.46	-2.99	27.33
CB2-217	108.5	11470	-10.74	-3.36	
CB2-218	109	11476	-11.37	-3.7	20.62
CB2-219	109.5	11484	-10.84	-2.94	
CB2-220	110	11491	-9.69	-2.66	34.97
CB2-221	110.5	11498	-9.86	-2.62	
CB2-222	111	11505			32.64
CB2-223	111.5	11513	-9.65	-2.86	
CB2-224	112	11521	-9.09	-3.09	35.13
CB2-225	112.5	11529	-9.72	-3.28	
CB2-226	113	11537	-10.15	-3.46	26.97
CB2-227	113.5	11545	-9.41	-3.46	
CB2-228	114	11553	-9.86	-3.13	30.49
CB2-229	114.5	11562	-9.07	-2.8	
CB2-230	115	11570	-9.71	-2.78	31.17
CB2-231	115.5	11579	-9.6	-2.95	
CB2-232	116	11589	-10.1	-3.35	30.81
CB2-233	116.5	11598	-9.45	-3.4	
CB2-234	117	11608	-10.03	-3.16	30.18
CB2-235	117.5	11618	-10.17	-3.21	
CB2-236	118	11628	-9.96	-3.27	29.19

CB2-237	118.5	11638	-10.15	-3.36	
CB2-238	119	11649	-10.19	-3.13	26.05
CB2-239	119.5	11660	-9.99	-2.92	
CB2-240	120	11670	-10.63	-2.87	22.66
CB2-241	120.5	11681	-10.94	-2.65	
CB2-242	121	11692	-10.92	-2.78	19.26
CB2-243	121.5	11704	-10.08	-2.62	
CB2-244	122	11715	-8.85	-2.5	31.86
CB2-245	122.5	11727	-8.89	-2.76	
CB2-246	123	11738	-9.2	-2.75	28.25
CB2-247	123.5	11750	-9.17	-3.07	
CB2-248	124	11762	-9.61	-2.88	25.37
CB2-249	124.5	11774	-9.53	-2.94	
CB2-250	125	11786	-9.44	-2.8	27.72
CB2-251	125.5	11799	-10	-2.88	
CB2-252	126	11811	-9.67	-2.84	25.29
CB2-253	126.5	11824	-9.88	-3.11	
CB2-254	127	11837	-9.5	-3.05	26.27
CB2-255	127.5	11850	-9.53	-3	
CB2-256	128	11863	-9.37	-3.13	25.83
CB2-257	128.5	11876	-8.9	-2.99	
CB2-258	129	11889	-8.45	-2.8	33.23
CB2-259	129.5	11903	-8.14	-2.62	
CB2-260	130	11917	-7.94	-2.63	36.27
CB2-261	130.5	11931	-8.08	-3.02	
CB2-262	131	11945	-8.45	-3.18	34.06
CB2-263	131.5	11959	-8.3	-3.1	
CB2-264	132	11974	-8.19	-2.93	33.89
CB2-265	132.5	11988	-7.92	-2.6	
CB2-266	133	12003	-8.76	-2.47	31.96
CB2-267	133.5	12018	-8.51	-2.64	
CB2-268	134	12033	-9.71	-2.66	23.89
CB2-269	134.5	12048	-9.08	-2.6	
CB2-270	135	12064	-8.47	-3.2	34.59

CB2-271	135.5	12080	-7.75	-2.57	
CB2-272	136	12096	-7.48	-2.42	32.9
CB2-273	136.5	12112	-7.95	-2.24	
CB2-274	137	12128	-7.73	-2.51	35.65
CB2-275	137.5	12144	-8.58	-3.44	
CB2-276	138	12161	-8.83	-2.77	31.88
CB2-277	138.5	12178	-8.68	-2.44	
CB2-278	139	12195			28.12
CB2-279	139.5	12212	-9.66	-2.99	
CB2-280	140	12229	-9.26	-2.83	24.85
CB2-281	140.5	12247	-8.99	-2.83	
CB2-282	141	12265	-9.6	-2.97	22.35
CB2-283	141.5	12283	-9.1	-2.74	
CB2-284	142	12301	-8.66	-2.57	28.72
CB2-285	142.5	12319	-8.74	-2.8	
CB2-286	143	12338	-8.6	-2.72	25.79
CB2-287	143.5	12356	-8.82	-3.02	
CB2-288	144	12375	-8.54	-2.86	29.31
CB2-288	144.5	12395	-8.32	-2.41	
CB2-289	145	12414	-8.56	-2.84	29.26
CB2-291	145.5	12434	-9.23	-2.98	
CB2-292	146	12454	-9.78	-3.15	21.86
CB2-293	146.5	12474	-9.5	-3.06	
CB2-294	147	12494	-8.95	-2.58	25.92
CB2-295	147.5	12514	-8.9	-2.61	
CB2-296	148	12535	-9.19	-2.7	23.53
CB2-297	148.5	12556	-9.21	-2.56	
CB2-298	149	12577	-9.65	-2.71	20.78
CB2-299	149.5	12600	-8.94	-2.75	
CB2-300	150	12626	-8.18	-2.83	28.57
CB2-301	150.5	12655	-8.24	-2.79	
CB2-302	151	12686	-8.49	-2.95	26
CB2-303	151.5	12719	-8.29	-2.75	
CB2-304	152	12753	-8.52	-3.2	25.54
CB2-305	152.5	12788	-8.91	-2.98	
CB2-306	153	12824	-10.16	-3.16	16.97

CB2-307	153.5	12860	-10.47	-2.9	
CB2-308	154	12895	-10.29	-2.75	19.92
CB2-309	154.5	12930	-10.11	-2.82	
CB2-310	155	12963	-9.95	-2.8	20.45
CB2-311	155.5	12995	-9.93	-2.8	
CB2-312	156	13025	-10.2	-2.77	18.57
CB2-313	156.5	13052	-10.54	-3.12	
CB2-314	157	13076	-10.31	-3.11	21.07
CB2-315	157.5	13096	-9.46	-3.51	
CB2-316	158	13113	-8.75	-3.71	36.8
CB2-317	158.5	13127	-8.69	-3.63	
CB2-318	159	13141	-8.92	-3.57	36.04
CB2-319	159.5	13154	-9.31	-3.31	
CB2-320	160	13167	-9.13	-3.57	35.71
CB2-321	160.5	13179	-9.19	-3.64	
CB2-322	161	13191	-9.5	-3.53	34.7
CB2-323	161.5	13202	-9.45	-2.99	
CB2-324	162	13213	-9.57	-3.28	31.43
CB2-325	162.5	13223	-9.28	-3	
CB2-326	163	13233	-9.52	-3.3	30.58
CB2-327	163.5	13243	-9.92	-3.25	
CB2-328	164	13252	-10.44	-3.72	25.84
CB2-329	164.5	13261	-10.12	-4.1	
CB2-330	165	13270	-9.6	-3.53	36.31
CB2-331	165.5	13278	-9.13	-3.42	
CB2-332	166	13287	-9.97	-3.72	33.26
CB2-333	166.5	13295	-9.92	-3.72	
CB2-334	167	13302	-9.56	-3.66	32.39
CB2-335	167.5	13310	-9.35	-3.62	
CB2-336	168	13317	-9.86	-4.14	31.51
CB2-337	168.5	13324	-9.85	-4.23	
CB2-338	169	13332			33.52
CB2-339	169.5	13339	-10.06	-4.67	
CB2-340	170	13346	-10.07	-3.95	27.64
CB2-341	170.5	13353	-9.95	-3.67	

CB2-342	171	13360	-9.69	-3.62	32.62
CB2-343	171.5	13367	-10.51	-4.26	
CB2-344	172	13374	-10.12	-4	27.26
CB2-345	172.5	13381	-9.93	-4.8	
CB2-346	173	13388	-9.87	-4.13	30.41
CB2-347	173.5	13396	-9.83	-4.14	
CB2-348	174	13403	-10.04	-3.77	26.85
CB2-349	174.5	13411	-10.15	-4.09	
CB2-350	175	13419	-9.56	-3.3	31.14
CB2-351	175.5	13427	-9.77	-3.34	
CB2-352	176	13435	-9.88	-3.3	26.74
CB2-353	176.5	13443	-9.95	-4.05	
CB2-354	177	13452	-10.2	-3.81	28.43
CB2-355	177.5	13461	-10.52	-4.2	
CB2-356	178	13471	-9.47	-3.49	30.12
CB2-357	178.5	13481	-9.62	-3.55	
CB2-358	179	13491	-10.02	-4.09	44.27
CB2-359	179.5	13501	-10.02	-3.65	
CB2-360	180	13512			27.09
CB2-361	180.5	13523	-9.18	-3.43	
CB2-362	181	13534	-9.2	-3.35	32.41
CB2-363	181.5	13545	-9.45	-3.45	
CB2-364	182	13556	-9.22	-3.54	28.04
CB2-365	182.5	13567	-9.13	-3.55	
CB2-366	183	13579	-9.32	-3.87	29.23
CB2-367	183.5	13590	-9.44	-3.93	
CB2-368	184	13602	-9.21	-3.82	28.5
CB2-369	184.5	13614	-8.49	-3.93	
CB2-370	185	13626	-8.58	-3.84	33.19
CB2-371	185.5	13638	-8.41	-3.76	
CB2-372	186	13650	-8.33	-3.51	30
CB2-373	186.5	13662	-8.67	-3.44	
CB2-374	187	13675	-8.75	-3.45	31.53
CB2-375	187.5	13687	-8.75	-3.66	
CB2-376	188	13700	-8.85	-3.48	28.96
CB2-377	188.5	13712	-9.09	-3.53	

CB2-378	189	13725	-9.35	-4.16	31.73
CB2-379	189.5	13738	-9.41	-4.03	
CB2-380	190	13751	-9.25	-3.48	29.39
CB2-381	190.5	13764	-9.46	-3.64	
CB2-382	191	13777	-9.62	-3.49	28.04
CB2-383	191.5	13790	-9.92	-3.63	
CB2-384	192	13804	-9.11	-3.82	32.63
CB2-385	192.5	13817	-9.26	-3.65	
CB2-386	193	13830	-9.14	-3.65	27.69
CB2-387	193.5	13844	-9.47	-3.48	
CB2-388	194	13857	-9.3	-3.69	28.02
CB2-389	194.5	13871	-9.56	-3.98	
CB2-390	195	13884	-9.27	-4.01	28.11
CB2-391	195.5	13898	-8.86	-3.41	
CB2-392	196	13912	-8.86	-3.64	29.09
CB2-393	196.5	13925	-8.51	-3.53	
CB2-394	197	13939	-8.42	-3.4	29.96
CB2-395	197.5	13953	-8.49	-3.26	
CB2-396	198	13967	-9.29	-3.69	27.86
CB2-397	198.5	13981	-9.39	-3.75	
CB2-398	199	13994	-9.46	-3.74	28.89
CB2-399	199.5	14008	-8.95	-3.21	
CB2-400	200	14022	-9.08	-3.39	29.93
CB2-401	200.5	14036	-9.12	-3.46	
CB2-402	201	14050	-9.2	-3.56	21.36
CB2-403	201.5	14064	-9.29	-3.72	
CB2-404	202	14078	-9.02	-3.58	25.53
CB2-405	202.5	14092	-9	-3.42	
CB2-406	203	14106	-8.39	-3.03	29.2
CB2-407	203.5	14120	-8.61	-3.05	
CB2-408	204	14134	-8.99	-3.34	27.21
CB2-409	204.5	14148			
CB2-410	205	14162	-9.23	-3.25	25.49
CB2-411	205.5	14176	-9.08	-3.25	
CB2-412	206	14190	-8.85	-3.21	33.79
CB2-413	206.5	14205	-9.4	-3.49	

CB2-414	207	14219	-10.38	-3.68	21.99
CB2-415	207.5	14234	-9.63	-3.38	
CB2-416	208	14248	-8.88	-3.08	33.98
CB2-417	208.5	14263			
CB2-418	209	14277	-9.05	-3.34	30.93
CB2-419	209.5	14292	-8.31	-2.88	
CB2-420	210	14307	-7.69	-2.84	39.42
CB2-421	210.5	14321	-7.85	-2.74	
CB2-422	211	14336	-8	-2.75	33.92
CB2-423	211.5	14351	-7.93	-2.72	
CB2-424	212	14366	-7.76	-2.75	33.45
CB2-425	212.5	14381	-8.02	-2.69	
CB2-426	213	14396	-8.16	-3.06	32.98
CB2-427	213.5	14411	-8.45	-3.3	
CB2-428	214	14426	-8.29	-3.04	33.08
CB2-449	214.5	14442	-8.27	-3.22	
CB2-430	215	14457	-8.78	-3.32	26.87
CB2-431	215.5	14472	-8.46	-3.02	
CB2-432	216	14488	-8.19	-3.06	33.25
CB2-433	216.5	14503	-8.48	-3.19	
CB2-434	217	14518	-8.07	-3.18	26.54
CB2-435	217.5	14534	-8.33	-2.86	
CB2-436	218	14549	-8.1	-2.92	32.46
CB2-437	218.5	14565	-7.63	-2.68	
CB2-438	219	14581	-8.03	-2.58	27.31
CB2-439	219.5	14596	-8.36	-3.04	
CB2-440	220	14612	-7.77	-2.7	29.44
CB2-441	220.5	14628	-7.57	-2.19	
CB2-442	221	14644	-7.92	-2.13	31.07
CB2-443	221.5	14659	-7.94	-2.12	
CB2-444	222	14675	-7.85	-2.21	32.27
CB2-445	222.5	14691	-7.77	-2.31	
CB2-446	223	14707	-7.81	-2.23	29.52
CB2-447	223.5	14723	-8.36	-2.15	
CB2-448	224	14739			36.33
CB2-449	224.5	14755	-8	-2.16	

CB2-450	225	14771	-8.53	-2.3	29.43
CB2-451	225.5	14788	-8.79	-2.37	
CB2-452	226	14804	-9.06	-2.45	28.88
CB2-453	226.5	14820	-8.48	-1.83	
CB2-454	227	14836	-8.14	-2	26.89
CB2-455	227.5	14853	-8.17	-1.95	
CB2-456	228	14869			32.67
CB2-457	228.5	14885	-7.56	-1.89	
CB2-458	229	14902	-7.82	-1.97	28.2
CB2-459	229.5	14918	-8.31	-2.11	
CB2-460	230	14934	-8.01	-2.17	32.84
CB2-461	230.5	14951	-8.05	-2.17	
CB2-462	231	14967	-8.31	-2.13	24.55
CB2-463	231.5	14984	-8.87	-1.94	
CB2-464	232	15001	-8.16	-1.78	28
CB2-465	232.5	15017	-9.17	-1.92	
CB2-466	233	15034	-10.31	-2.06	14.86
CB2-467	233.5	15050	-10.44	-2.24	
CB2-468	234	15067	-9.24	-2.22	24.53
CB2-469	234.5	15084	-8.66	-1.88	
CB2-470	235	15100	-8.36	-1.89	26.75
CB2-471	235.5	15117	-8.4	-2.13	
CB2-472	236	15134	-8.24	-2.28	30.51
CB2-473	236.5	15150	-8.06	-1.93	
CB2-474	237	15167	-8.35	-2.46	25.82
CB2-475	237.5	15183	-8.49	-1.99	
CB2-476	238	15200	-8.03	-1.79	31.38
CB2-477	238.5	15216	-7.81	-1.89	
CB2-478	239	15233	-8.71	-1.66	21.26
CB2-479	239.5	15249	-8.41	-1.81	
CB2-480	240	15265	-8.98	-1.96	21.71
CB2-481	240.5	15282	-9.26	-1.99	
CB2-482	241	15298	-8.72	-2.07	25.22
CB2-483	241.5	15314	-8.47	-2.24	
CB2-484	242	15330	-9.32	-2.48	21.15
CB2-485	242.5	15346	-8.86	-2.02	

CB2-486	243	15362	-9.21	-2.19	25.59
CB2-487	243.5	15378	-9.32	-2.01	
CB2-488	244	15394	-9.34	-1.88	21.63
CB2-489	244.5	15410	-9.02	-1.75	
CB2-490	245	15426	-6.6	-1.62	30.33
CB2-491	245.5	15442	-8.46	-1.64	
CB2-492	246	15458	-8.83	-1.85	24.01
CB2-493	246.5	15474	-9.48	-1.69	
CB2-494	247	15490	-8.82	-1.84	27.58
CB2-495	247.5	15506	-7.29	-1.46	
CB2-496	248	15522	-7.92	-2.07	26.15
CB2-497	248.5	15538	-8.22	-1.76	
CB2-498	249	15553	-8.53	-1.56	25.73
CB2-499	249.5	15569	-8.14	-1.53	
CB2-500	250	15585	-8.02	-1.84	28.67
CB2-501	250.5	15601	-8.89	-1.77	
CB2-502	251	15617	-9.6	-2.59	29.26
CB2-503	251.5	15632	-8.44	-1.53	
CB2-504	252	15648	-7.92	-2.26	27.79
CB2-505	252.5	15664	-7.82	-2.02	
CB2-506	253	15680	-7.87	-1.78	32.75
CB2-507	253.5	15695	-9.57	-2.1	
CB2-508	254	15711	-8.59	-2	26.73
CB2-509	254.5	15727	-8.59	-1.69	
CB2-510	255	15743	-9.04	-1.85	28.45
CB2-511	255.5	15759	-8.8	-1.66	
CB2-512	256	15774	-8.43	-2.12	26.81
CB2-513	256.5	15790	-9.49	-1.96	
CB2-514	257	15806	-9.12	-1.8	30.63
CB2-515	257.5	15822	-6.92	-1.4	
CB2-516	258	15838	-6.62	-1.85	33.82
CB2-517	258.5	15853	-6.58	-1.53	
CB2-518	259	15869	-6.27	-1.45	27.28
CB2-519	259.5	15885	-7.08	-2.08	
CB2-520	260	15901	-7.45	-2.3	32.74
CB2-521	260.5	15917	-7.42	-1.8	

CB2-522	261	15933	-8.21	-2.02	29.41
CB2-523	261.5	15949	-8.4	-1.97	
CB2-524	262	15965	-8.67	-2.32	28.93
CB2-525	262.5	15981	-8.98	-1.85	
CB2-526	263	15997	-9.2	-2	28.46
CB2-527	263.5	16013	-8.5	-1.98	
CB2-528	264	16029	-8.53	-2.27	28.26
CB2-529	264.5	16045	-8.72	-1.84	
CB2-530	265	16062	-9	-1.83	28.78
CB2-531	265.5	16078	-9.3	-1.83	
CB2-532	266	16094	-8.8	-2.23	28.55
CB2-533	266.5	16110	-7.72	-1.76	
CB2-534	267	16127	-7.36	-1.94	26.61
CB2-535	267.5	16143	-6.9	-1.87	
CB2-536	268	16159	-7.63	-2.19	28.99
CB2-537	268.5	16176	-7.83	-2.26	
CB2-538	269	16192	-7.8	-2.3	22.87
CB2-539	269.5	16209	-8.63	-2.25	
CB2-540	270	16226	-8.28	-2.41	23.97
CB2-541	270.5	16242	-8.3	-1.83	
CB2-542	271	16259	-8.12	-1.57	25.45
CB2-543	271.5	16276	-7.95	-1.57	
CB2-544	272	16293	-7.73	-1.78	26.17
CB2-545	272.5	16309	-7.68	-1.54	
CB2-546	273	16326	-7.22	-1.79	23.6
CB2-547	273.5	16343	-7.59	-1.59	
CB2-548	274	16360	-7.63	-2.16	26.62
CB2-549	274.5	16377	-7.51	-1.83	
CB2-550	275	16395	-7.63	-1.59	25.37
CB2-551	275.5	16412	-7.59	-1.78	
CB2-552	276	16429	-7.9	-2.04	26.02
CB2-553	276.5	16447	-7.42	-1.57	
CB2-554	277	16464	-6.96	-1.66	
CB2-555	277.5	16481	-7.24	-1.48	

CB2-556	278	16499	-7.82	-1.92	28.22
CB2-557	278.5	16517	-8.32	-1.45	
CB2-558	279	16534	-7.03	-1.36	24.83
CB2-559	279.5	16552	-7.28	-1.64	
CB2-560	280	16570	-7.75	-1.92	27.04
CB2-561	280.5	16588	-7.69	-1.45	
CB2-562	281	16606	-7.57	-1.54	26.71
CB2-563	281.5	16624	-7.88	-1.67	
CB2-564	282	16642	-8.22	-2.01	26.64
CB2-565	282.5	16661	-8.25	-1.67	
CB2-566	283	16679	-7.95	-1.71	24.77
CB2-567	283.5	16698	-8.83	-1.51	
CB2-568	284	16716	-8.06	-1.71	27.59
CB2-569	284.5	16735	-7.6	-2.6	
CB2-570	285	16754	-8.23	-1.53	24.84
CB2-571	285.5	16772	-7.87	-1.35	
CB2-572	286	16791	-8.23	-1.55	28.09
CB2-573	286.5	16810	-8.33	-1.3	
CB2-574	287	16830	-7.96	-1.29	27.2
CB2-575	287.5	16849	-7.96	-1.41	
CB2-576	288	16868	-7.91	-1.75	30.03
CB2-577	288.5	16888	-8.55	-1.57	
CB2-578	289	16907	-7.88	-1.68	25.15
CB2-579	289.5	16927	-7.88	-1.42	
CB2-580	290	16947	-7.29	-1.68	33.06
CB2-581	290.5	16966	-7.75	-1.5	
CB2-582	291	16986	-7.17	-1.58	26.14
CB2-583	291.5	17006	-6.82	-1.51	
CB2-584	292	17027	-7.24	-1.84	27.63
CB2-585	292.5	17047	-7.47	-1.59	
CB2-586	293	17067	-7.11	-1.68	24.28
CB2-587	293.5	17088	-6.84	-1.51	
CB2-588	294	17109	-7.06	-1.96	33.72
CB2-589	294.5	17129	-7.5	-1.88	

CB2-590	295	17150	-7.88	-1.99	31.21
CB2-591	295.5	17171	-8.21	-1.91	
CB2-592	296	17192	-7.88	-2.49	28.7
CB2-593	296.5	17214	-7.44	-1.67	
CB2-594	297	17235	-7.49	-1.76	22.48
CB2-595	297.5	17257	-7.95	-1.97	
CB2-596	298	17278	-8.07	-2.27	24.95
CB2-597	298.5	17300	-8.32	-2.02	
CB2-598	299	17322	-8.54	-2.09	25.57
CB2-599	299.5	17344	-8.55	-2.15	
CB2-600	300	17366	-8.36	-2.47	21.17
CB2-601	300.5	17389	-8.43	-2.02	
CB2-602	301	17411	-7.8	-1.91	23.69
CB2-603	301.5	17434	-7.52	-2.42	
CB2-604	302	17457	-7.66	-2.73	26
CB2-605	302.5	17480	-7.81	-2.31	
CB2-606	303	17503	-8.54	-2.86	20.52
CB2-607	303.5	17526	-8.03	-1.9	
CB2-608	304	17549	-8.23	-2.11	29.28
CB2-609	304.5	17573	-7.54	-1.7	
CB2-610	305	17596	-7.14	-1.56	20.25
CB2-611	305.5	17620	-7.73	-2.04	
CB2-612	306	17644	-8.02	-2.48	28.02
CB2-613	306.5	17668	-8.04	-2.2	
CB2-614	307	17693	-7.51	-1.97	30.37
CB2-615	307.5	17717	-7.37	-1.96	
CB2-616	308	17742	-7.7	-2.52	30.54
CB2-617	308.5	17766	-7.92	-2.26	
CB2-618	309	17791	-7.73	-2.27	32.09
CB2-619	309.5	17817	-8.43	-2.49	
CB2-620	310	17842	-8.64	-3.08	23.1
CB2-621	310.5	17867	-8.21	-2.68	
CB2-622	311	17893	-7.59	-2.42	31.01
CB2-623	311.5	17919	-7.15	-2.5	
CB2-624	312	17945	-7.27	-2.67	29.72

CB2-625	312.5	17971	-7.54	-2.45	
CB2-626	313	17997	-7.71	-2.58	28.4
CB2-627	313.5	18023	-7.82	-2.66	
CB2-628	314	18050	-7.8	-2.97	29.92
CB2-629	314.5	18077	-7.75	-2.62	
CB2-630	315	18105	-7.87	-2.68	25.65
CB2-631	315.5	18134	-7.77	-2.95	
CB2-632	316	18164	-8.19	-3.24	23.92
CB2-633	316.5	18195	-8.59	-3.02	
CB2-634	317	18226	-8.64	-3.1	24.85
CB2-635	317.5	18258	-8.5	-2.61	
CB2-636	318	18291	-8.28	-2.73	25.44
CB2-637	318.5	18324	-8.14	-2.38	
CB2-638	319	18359	-8.02	-2.59	23.02
CB2-639	319.5	18394	-7.98	-2.71	
CB2-640	320	18429	-8.44	-2.86	24.86
CB2-641	320.5	18465	-7.96	-2.45	
CB2-642	321	18502	-8.04	-2.63	22.39
CB2-643	321.5	18540	-8.01	-2.78	
CB2-644	322	18577	-7.86	-2.98	27.51
CB2-645	322.5	18616	-8.23	-2.57	
CB2-646	323	18655	-7.65	-2.53	25.57
CB2-647	323.5	18694	-8.18	-3.04	
CB2-648	324	18734	-8.2	-3.01	25.28
CB2-649	324.5	18774	-8.63	-2.88	
CB2-650	325	18815	-8.07	-2.78	23.11
CB2-651	325.5	18856	-8.29	-2.81	
CB2-652	326	18897	-8.05	-2.92	28.8
CB2-653	326.5	18939	-8.26	-2.42	
CB2-654	327	18981	-8.44	-2.43	21.91
CB2-655	327.5	19023	-8.43	-2.51	
CB2-656	328	19066	-8.32	-2.85	28.05
CB2-657	328.5	19109	-8.49	-3.14	
CB2-658	329	19152	-8.14	-2.52	20.56
CB2-659	329.5	19195	-8.55	-2.38	
CB2-660	330	19238	-8.46	-2.9	31.66

CB2-661	330.5	19282	-7.88	-2.76	
CB2-662	331	19325	-7.4	-2.56	25.65
CB2-663	331.5	19369	-7.29	-2.52	
CB2-664	332	19413	-7.76	-2.75	30.85
CB2-665	332.5	19456	-7.7	-2.7	
CB2-666	333	19500	-7.35	-2.9	20.78
CB2-667	333.5	19544	-7.75	-3.19	
CB2-668	334	19588	-7.58	-3.31	29.46
CB2-669	334.5	19631			
CB2-670	335	19675	-7.23	-3.08	22.57
CB2-671	335.5	19718	-7.23	-3.14	
CB2-672	336	19761	-7.58	-3.28	32.64
CB2-673	336.5	19805	-7.91	-2.98	
CB2-674	337	19848	-7.98	-2.84	32.72
CB2-675	337.5	19890	-7.93	-2.79	
CB2-676	338	19933	-7.95	-3.19	30.63
CB2-677	338.5	19975	-7.69	-2.68	
CB2-678	339	20017	-7.96	-2.65	28.02
CB2-679	339.5	20059	-8.08	-2.65	
CB2-680	340	20100	-8.01	-3.01	29.23
CB2-681	340.5	20141	-8.32	-3.29	
CB2-682	341	20182	-7.99	-2.93	23.46
CB2-683	341.5	20222	-8.32	-2.84	
CB2-684	342	20262	-8.23	-3.12	30.07
CB2-685	342.5	20301	-8.45	-2.8	
CB2-686	343	20340	-8.62	-2.76	22.28
CB2-687	343.5	20379	-8.28	-2.76	
CB2-688	344	20417	-8.51	-3.11	31.8
CB2-689	344.5	20454	-8.78	-3.22	
CB2-690	345	20490	-9.06	-3.26	28.68
CB2-691	345.5	20524	-8.97	-2.96	
CB2-692	346	20558	-8.89	-3.26	26.34
CB2-693	346.5	20591	-8.75	-3.04	
CB2-694	347	20623	-8.83	-3.09	24.62
CB2-695	347.5	20654	-8.92	-3.14	
CB2-696	348	20684	-8.75	-3.5	24.88

CB2-697	348.5	20714	-8.33	-2.89	
CB2-698	349	20742	-8.36	-2.89	23.64
CB2-699	349.5	20771	-8.44	-2.79	
CB2-700	350	20798	-8.63	-3.33	24.05
CB2-701	350.5	20825	-8.75	-2.94	
CB2-702	351	20852	-8.74	-2.87	26.13
CB2-703	351.5	20878	-8.92	-2.92	
CB2-704	352	20903	-9.07	-3.21	24.33
CB2-705	352.5	20929	-8.87	-2.9	
CB2-706	353	20954	-8.98	-3.11	23.11
CB2-707	353.5	20979	-9.12	-2.96	
CB2-708	354	21003	-9.28	-3.21	24.11
CB2-709	354.5	21028	-9.6	-3.11	
CB2-710	355	21053	-9.27	-3.09	25.21
CB2-711	355.5	21077	-9.34	-3.13	
CB2-712	356	21102	-9.29	-3.29	26.31
CB2-713	356.5	21126	-9.17	-2.88	
CB2-714	357	21151	-8.95	-2.79	28.5
CB2-715	357.5	21176	-8.97	-2.94	
CB2-716	358	21201	-8.88	-3.01	26.83
CB2-717	358.5	21227	-8.99	-2.91	
CB2-718	359	21253	-8.49	-3.12	27.63
CB2-719	359.5	21279	-8.63	-3.03	
CB2-720	360	21306	-8.89	-3.33	26.31
CB2-721	360.5	21334	-8.95	-2.98	
CB2-722	361	21361	-9.21	-2.95	24.22
CB2-723	361.5	21390	-9.38	-3.09	
CB2-724	362	21419	-9.33	-3	23.71
CB2-725	362.5	21449	-9.29	-2.96	
CB2-726	363	21480	-9.2	-3.2	25.63
CB2-727	363.5	21512	-9.11	-3.06	
CB2-728	364	21544	-9.29	-3.28	26.63
CB2-729	364.5	21578	-9.22	-2.94	
CB2-730	365	21613	-9.11	-2.86	27.92
CB2-731	365.5	21648	-9.32	-3.01	

CB2-732	366	21685	-9.28	-3.34	25.49
CB2-733	366.5	21723	-8.74	-2.31	
CB2-734	367	21762	-8.99	-2.89	26.99
CB2-735	367.5	21802	-9.26	-3.23	
CB2-736	368	21844	-9.1	-3.57	26.63
CB2-737	368.5	21887	-9.14	-3.06	
CB2-738	369	21932	-9.11	-3.1	29.03
CB2-739	369.5	21978	-9.28	-3.03	
CB2-740	370	22025	-9.51	-3.48	29.5
CB2-741	370.5	22074	-9.36	-3.21	
CB2-742	371	22125	-9.48	-3.07	29.97
CB2-743	371.5	22178	-9.25	-2.92	
CB2-744	372	22232			25.58
CB2-745	372.5	22288	-9.22	-3.06	
CB2-746	373	22346	-9.19	-3.13	
CB2-747	373.5	22406	-8.97	-3.11	
CB2-748	374	22468	-9.13	-3.29	27.04
CB2-749	374.5	22532	-9.7	-3.34	
CB2-750	375	22598	-9.86	-3.45	26.68
CB2-751	375.5	22666	-9.66	-3.14	
CB2-752	376	22736	-9.53	-3.35	27.24
CB2-753	376.5	22834	-9.82	-3.09	
CB2-754	377	22977	-9.74	-3.11	21.56
CB2-755	377.5	23157	-9.91	-3.26	
CB2-756	378	23365	-9.74	-3.23	24.18
CB2-757	378.5	23592	-9.71	-3.15	
CB2-758	379	23829	-9.83	-3.32	22.33
CB2-759	379.5	24066	-9.99	-3.24	
CB2-760	380	24296	-9.99	-3.58	21.37
CB2-761	380.5	24508	-10.11	-3.17	
CB2-762	381	24693	-9.97	-3.26	24.08
CB2-763	381.5	24844	-10	-3.19	
CB2-764	382	24950	-10.19	-3.3	19.24
CB2-765	382.5	25030	-10.16	-3	

CB2-766	383	25107	-9.95	-2.92	29.69
CB2-767	383.5	25183	-9.49	-2.88	
CB2-768	384	25257	-8.41	-3.28	32.27
CB2-769	384.5	25329	-8.28	-3.19	
CB2-770	385	25399	-7.79	-3.18	30.01
CB2-771	385.5	25467	-7.81	-3.04	
CB2-772	386	25534	-7.81	-3.33	31.39
CB2-773	386.5	25598	-7.44	-3.03	
CB2-774	387	25661	-7.54	-2.89	26.88
CB2-775	387.5	25723	-7.58	-2.83	
CB2-776	388	25782	-7.81	-3.11	34.75
CB2-777	388.5	25840	-7.91	-3.02	
CB2-778	389	25897	-8.03	-3.18	26.74
CB2-779	389.5	25952	-7.85	-3.11	
CB2-780	390	26006	-7.57	-3.15	33.01
CB2-781	390.5	26058	-7.87	-3.22	
CB2-782	391	26109	-8.12	-3.28	26.13
CB2-783	391.5	26158	-8.06	-3.24	
CB2-784	392	26206	-8.02	-3.42	29.27
CB2-785	392.5	26253	-7.9	-3.03	
CB2-786	393	26299	-7.43	-3	31.07
CB2-787	393.5	26344	-7.5	-2.96	
CB2-788	394	26387	-7.84	-3.25	31.99
CB2-789	394.5	26429	-7.87	-2.92	
CB2-790	395	26471	-7.59	-3.09	32.99
CB2-791	395.5	26511	-7.68	-2.92	
CB2-792	396	26550	-7.89	-3.13	35.16
CB2-793	396.5	26589	-7.98	-3.14	
CB2-794	397	26626	-7.79	-3.05	31.9
CB2-795	397.5	26663	-7.95	-3.18	
CB2-796	398	26699	-7.89	-3.23	30.62
CB2-797	398.5	26734	-8.86	-3.21	
CB2-798	399	26768	-8.7	-3.14	26.39
CB2-799	399.5	26802	-8.25	-2.36	

CB2-800	400	26835	-7.81	-3.12	33.12
CB2-801	400.5	26868	-7.93	-2.92	
CB2-802	401	26900	-8.1	-3.03	29.01
CB2-803	401.5	26931	-8.05	-2.94	
CB2-804	402	26962	-8.14	-3.27	29.11
CB2-805	402.5	26993	-8.16	-2.71	
CB2-806	403	27023	-7.98	-2.84	28.37
CB2-807	403.5	27053	-8.43	-2.93	
CB2-808	404	27083	-8.49	-3.03	28.25
CB2-809	404.5	27112	-8.34	-2.93	
CB2-810	405	27141	-8.39	-3.03	26.36
CB2-811	405.5	27170	-8.08	-2.85	
CB2-812	406	27199	-7.98	-3.1	29.26
CB2-813	406.5	27228	-8.09	-3.12	
CB2-814	407	27256	-8.13	-3.03	27.24
CB2-815	407.5	27285	-7.7	-3.14	
CB2-816	408	27314	-7.44	-3.14	33.54
CB2-817	408.5	27343	-7.54	-2.79	
CB2-818	409	27372	-7.54	-2.95	30.9
CB2-819	409.5	27401	-7.5	-2.97	
CB2-820	410	27430	-7.73	-3.27	32.37
CB2-821	410.5	27459	-7.76	-3.08	
CB2-822	411	27489	-7.95	-3.12	27.36
CB2-823	411.5	27519	-8.2	-3.07	
CB2-824	412	27550	-8.35	-3.22	26.99
CB2-825	412.5	27581	-8.38	-2.91	
CB2-826	413	27612	-8.53	-3.05	25.75
CB2-827	413.5	27643	-8.63	-3.1	
CB2-828	414	27674	-8.73	-3.27	26.62
CB2-829	414.5	27705	-8.93	-3.03	
CB2-830	415	27736	-8.78	-2.98	25.12
CB2-831	415.5	27767	-8.39	-2.94	
CB2-832	416	27797	-8.22	-3.31	29.77
CB2-833	416.5	27827	-7.96	-3.1	

CB2-834	417	27856	-7.8	-3.08	29.42
CB2-835	417.5	27886	-7.86	-3.15	
CB2-836	418	27915	-7.76	-3.12	31.89
CB2-837	418.5	27944	-7.8	-2.68	
CB2-838	419	27973	-8.16	-2.85	27.5
CB2-839	419.5	28002	-8.5	-3.03	
CB2-840	420	28030	-8.57	-2.88	28.44
CB2-841	420.5	28058	-8.32	-2.73	
CB2-842	421	28086	-8.45	-2.85	26.64
CB2-843	421.5	28114			
CB2-844	422	28141	-8.63	-3.28	25.59
CB2-845	422.5	28169	-8.37	-2.95	
CB2-846	423	28196	-8.04	-3.2	25.99
CB2-847	423.5	28223	-7.93	-3.25	
CB2-848	424	28250	-8.56	-3.5	23.48
CB2-849	424.5	28276	-8.59	-3.22	
CB2-850	425	28302	-7.99	-3.16	22.71
CB2-851	425.5	28329	-7.49	-3.32	
CB2-852	426	28355	-7.29	-3.49	31.34
CB2-853	426.5	28380	-7.62	-3.3	
CB2-854	427	28406	-7.64	-3.12	27.11
CB2-855	427.5	28431	-8.08	-3.34	
CB2-856	428	28457	-8.47	-3.65	25.04
CB2-857	428.5	28482	-8.79	-3.22	
CB2-858	429	28507	-8.78	-3.18	20.15
CB2-859	429.5	28532	-9.11	-3.48	
CB2-860	430	28556	-8.8	-3.5	22.64
CB2-861	430.5	28581	-7.88	-3.2	
CB2-862	431	28605	-7.32	-2.99	30.68
CB2-863	431.5	28629	-7.25	-2.75	
CB2-864	432	28653	-7.39	-3.09	34.51
CB2-865	432.5	28677	-7.42	-2.9	
CB2-866	433	28701	-7.12	-2.87	33.45
CB2-867	433.5	28724	-7.18	-2.88	

CB2-868	434	28748	-7.51	-3.28	32.4
CB2-869	434.5	28771	-7.73	-3.04	
CB2-870	435	28794	-7.68	-3.25	27.66
CB2-871	435.5	28817	-7.68	-3.26	
CB2-872	436	28840	-8.18	-3.59	26.93
CB2-873	436.5	28863	-8.27	-3.27	
CB2-874	437	28886	-8.18	-3.19	25.26
CB2-875	437.5	28908	-7.64	-3.14	
CB2-876	438	28931	-7.24	-3.2	34.12
CB2-877	438.5	28953	-7.33	-2.74	
CB2-878	439	28975	-7.61	-2.8	28.98
CB2-879	439.5	28997	-7.75	-2.85	
CB2-880	440	29019	-7.74	-3.2	30.68
CB2-881	440.5	29041	-7.64	-2.89	
CB2-882	441	29063	-7.5	-2.85	29.92
CB2-883	441.5	29085	-7.53	-2.7	
CB2-884	442	29106	-7.76	-3.16	31.83
CB2-885	442.5	29128	-7.92	-2.87	
CB2-886	443	29149	-7.95	-2.79	26.38
CB2-887	443.5	29171	-7.94	-2.94	
CB2-888	444	29192	-8.06	-3.15	30.01
CB2-889	444.5	29213	-8.09	-2.8	
CB2-890	445	29234	-7.95	-2.93	26.9
CB2-891	445.5	29255	-7.64	-2.78	
CB2-892	446	29276	-7.54	-3.28	31.82
CB2-893	446.5	29297	-7.55	-3.08	
CB2-894	447	29318	-7.71	-3.05	26.9
CB2-895	447.5	29338	-7.89	-3.16	
CB2-896	448	29358	-7.86	-3.39	27.35
CB2-897	448.5	29378	-7.66	-3.18	
CB2-898	449	29397	-7.4	-3.17	28.33
CB2-899	449.5	29415	-7.15	-2.97	
CB2-900	450	29434	-7.32	-3.18	33.19
CB2-901	450.5	29451	-7.39	-2.89	

CB2-902	451	29468	-7.46	-3.01	
CB2-903	451.5	29485	-7.21	-2.69	
CB2-904	452	29502	-7.89	-3.47	30.52
CB2-905	452.5	29518	-7.62	-2.98	
CB2-906	453	29534	-7.55	-2.9	28.89
CB2-907	453.5	29549	-7.31	-2.76	
CB2-908	454	29564	-7.44	-3.01	31.48
CB2-909	454.5	29579	-7.3	-2.61	
CB2-910	455	29594	-7.82	-2.84	25.04
CB2-911	455.5	29608	-7.95	-2.71	
CB2-912	456	29622	-8.06	-3.13	26.48
CB2-913	456.5	29637	-7.92	-2.84	
CB2-914	457	29650	-7.84	-2.73	27.91
CB2-915	457.5	29664			
CB2-916	458	29678			30.72
CB2-917	458.5	29691	-7.71	-2.54	
CB2-918	459	29705	-7.57	-2.38	29.31
CB2-919	459.5	29718	-8.1	-2.51	
CB2-920	460	29731	-8.28	-2.92	26.28
CB2-921	460.5	29744	-7.86	-2.55	
CB2-922	461	29758	-7.91	-2.73	25.78
CB2-923	461.5	29771	-7.91	-2.68	
CB2-924	462	29784	-8.17	-2.93	28.76
CB2-925	462.5	29798	-8.2	-2.77	
CB2-926	463	29811	-8.4	-2.97	21.99
CB2-927	463.5	29825	-8.63	-3.06	
CB2-928	464	29838	-8.75	-3.45	22.59
CB2-929	464.5	29852	-8.33	-2.95	
CB2-930	465	29866	-8.01	-3.02	25.33
CB2-931	465.5	29880	-8.41	-2.88	
CB2-932	466	29894	-8.84	-3.38	23.57
CB2-933	466.5	29909	-8.43	-3.18	
CB2-934	467	29924	-8.51	-3.14	20.83
CB2-935	467.5	29939	-8.4	-3.25	

CB2-936	468	29954	-7.8	-2.9	29.1
CB2-937	468.5	29970	-7.42	-2.69	
CB2-938	469	29986	-7.31	-2.59	30.37
CB2-939	469.5	30002	-7.6	-2.55	
CB2-940	470	30018	-7.62	-2.69	29.6
CB2-941	470.5	30035	-7.6	-2.49	
CB2-942	471	30053	-7.78	-2.42	27.12
CB2-943	471.5	30071	-7.83	-2.63	
CB2-944	472	30089	-7.71	-2.84	27.28
CB2-945	472.5	30108	-7.53	-2.57	
CB2-946	473	30127	-7.75	-2.69	28.01
CB2-947	473.5	30147	-7.85	-2.69	
CB2-948	474	30167	-8.16	-3	27.64
CB2-949	474.5	30188	-8.36	-2.64	
CB2-950	475	30209	-8.37	-2.58	25.82
CB2-951	475.5	30231	-8.17	-2.45	
CB2-952	476	30254	-8.15	-2.73	28.41
CB2-953	476.5	30277	-7.92	-2.36	
CB2-954	477	30301	-8.04	-2.46	26.4
CB2-955	477.5	30325	-8.27	-2.71	
CB2-956	478	30350	-8.17	-3.03	25.84
CB2-957	478.5	30376	-7.98	-2.71	
CB2-958	479	30403	-8.02	-2.66	26.51
CB2-959	479.5	30430	-8.29	-2.81	
CB2-960	480	30458	-8.46	-3.08	23.08
CB2-961	480.5	30487	-7.96	-2.74	
CB2-962	481	30517	-8.07	-2.96	25.13
CB2-963	481.5	30548	-7.75	-2.83	
CB2-964	482	30579	-7.83	-3.41	27.54
CB2-965	482.5	30611	-7.82	-3.06	
CB2-966	483	30644	-8.06	-3.17	24.33
CB2-967	483.5	30684	-8.13	-3.09	
CB2-968	484	30734	-8.1	-3.33	26.34
CB2-969	484.5	30795	-7.86	-2.9	
CB2-970	485	30866	-8.01	-3.17	25.89
CB2-971	485.5	30947	-8.07	-3.21	

CB2-972	486	31037	-8.34	-3.75	25.47
CB2-973	486.5	31136	-8.66	-3.55	
CB2-974	487	31243	-8.47	-3.3	24.43
CB2-975	487.5	31358	-8.28	-3.09	
CB2-976	488	31479	-8.31	-3.46	27.76
CB2-977	488.5	31608	-8.64	-3.51	
CB2-978	489	31743	-8.73	-3.56	21.35
CB2-979	489.5	31883	-8.28	-3.45	
CB2-980	490	32029	-8.12	-3.67	27.13
CB2-981	490.5	32180	-8.15	-3.23	
CB2-982	491	32335	-8.29	-3.69	22.77
CB2-983	491.5	32494	-8.27	-3.37	
CB2-984	492	32656	-8.17	-3.52	25.82
CB2-985	492.5	32821	-7.92	-3.36	
CB2-986	493	32989	-7.61	-3.21	27.12
CB2-987	493.5	33158	-7.71	-3.25	
CB2-988	494	33329	-8.3	-3.54	25.66
CB2-989	494.5	33501	-8.61	-3.29	
CB2-990	495	33673	-7.13	-2.79	22.11
CB2-991	495.5	33845	-8.36	-3.18	
CB2-992	496	34017	-8.19	-3.44	25.93
CB2-993	496.5	34188	-8.22	-3.13	
CB2-994	497	34357	-8.49	-3.09	22.96
CB2-1016	497.5	34524	-8.46	-3.29	23.87
CB2-1017	498	34689	-8.44	-2.72	
CB2-1018	498.5	34850	-8.91	-2.73	20.6
CB2-1019	499	35009	-8.75	-2.86	
CB2-1020	499.5	35163	-8.59	-3.34	24
CB2-1021	500	35313	-8.53	-3.12	
CB2-1022	500.5	35458	-8.35	-3.13	23
CB2-1023	501	35598	-8.33	-3.3	
CB2-1024	501.5	35732	-8.25	-3.49	22.6
CB2-1025	502	35860	-8.59	-3.48	
CB2-1026	502.5	35980	-8.6	-3.22	21.59
CB2-1027	503	36094	-7.17	-2.8	
CB2-1028	503.5	36200	-7.44	-3.07	32.49

CB2-1029	504	36297	-7.86	-2.81	
CB2-1030	504.5	36386	-8.24	-3.01	27.46
CB2-1031	505	36465	-8.21	-3.13	
CB2-1032	505.5	36535	-8.02	-3.42	33.83
CB2-1033	506	36594	-8.29	-2.81	
CB2-1034	506.5	36643	-8.17	-2.81	32.99
CB2-1035	507	36681	-8.08	-3	
CB2-1036	507.5	36712	-8	-3.28	33.25
CB2-1037	508	36742	-7.67	-3.09	
CB2-1038	508.5	36771	-7.54	-2.76	32.15
CB2-1039	509	36798	-7.75	-2.8	
CB2-1040	509.5	36824	-7.79	-2.97	33.06
CB2-1041	510	36849	-7.35	-2.69	
CB2-1042	510.5	36874	-7.27	-2.8	31.02
CB2-1043	511	36897	-7.11	-2.71	
CB2-1044	511.5	36919	-8.06	-3.27	30.89
CB2-1045	512	36940	-8.22	-3.1	
CB2-1046	512.5	36960	-8.09	-2.94	29.43
CB2-1047	513	36980	-8.33	-2.86	
CB2-1048	513.5	36999	-8.1	-3.21	32.32
CB2-1049	514	37017			
CB2-1050	514.5	37034	-7.7	-2.68	35.6
CB2-1051	515	37051	-7.22	-2.72	
CB2-1052	515.5	37067	-7.62	-3.21	30.07
CB2-1053	516	37083	-8.02	-3.01	
CB2-1054	516.5	37099	-8.25	-3.17	26.72
CB2-1055	517	37114	-8.5	-3.3	
CB2-1056	517.5	37128	-8.46	-3.19	25.57
CB2-1057	518	37143	-8.05	-3.01	
CB2-1058	518.5	37157	-8.26	-3.17	23.34
CB2-1059	519	37171	-8.66	-3.34	
CB2-1060	519.5	37185	-8.8	-3.59	21.97
CB2-1061	520	37198	-8.37	-3.36	
CB2-1062	520.5	37212	-7.5	-2.82	26.54
CB2-1063	521	37226	-7.62	-3.02	
CB2-1064	521.5	37240	-7.45	-3.08	27.24

CB2-1065	522	37254	-6.56	-2.65	
CB2-1066	522.5	37268	-6.8	-2.94	28.83
CB2-1067	523	37282	-7.27	-3.11	
CB2-1068	523.5	37297	-8.2	-3.67	21.84
CB2-1069	524	37312	-8.1	-3.41	
CB2-1070	524.5	37327	-7.56	-3.14	27.21
CB2-1071	525	37343	-8.05	-3.06	
CB2-1072	525.5	37360	-8.15	-3.26	25.88
CB2-1073	526	37377	-7.87	-3.1	
CB2-1074	526.5	37394	-8.06	-3.05	25.26
CB2-1075	527	37412	-8.16	-2.99	
CB2-1076	527.5	37431	-7.91	-3.14	26.36
CB2-1077	528	37451	-7.75	-2.89	
CB2-1078	528.5	37471	-7.48	-2.86	26.07
CB2-1079	529	37492	-7.65	-2.92	
CB2-1080	529.5	37514	-8.12	-3.23	22.99
CB2-1081	530	37537	-8.3	-3.17	
CB2-1082	530.5	37562	-8.17	-2.88	21.89
CB2-1083	531	37587	-8.21	-3.12	
CB2-1084	531.5	37613	-7.88	-3.21	24.89
CB2-1085	532	37640	-8.16	-3.03	
CB2-1086	532.5	37669	-8.16	-3.26	23.15
CB2-1087	533	37699	-7.94	-3.2	
CB2-1088	533.5	37734	-8.06	-3.4	24.78
CB2-1089	534	37776	-7.54	-3.05	
CB2-1090	534.5	37826	-7.3	-2.95	28.02
CB2-1091	535	37884	-7.5	-2.84	
CB2-1092	535.5	37948	-7.68	-3.09	25.39
CB2-1093	536	38019	-8.4	-3	
CB2-1094	536.5	38096	-7.98	-2.7	23.8
CB2-1095	537	38179	-8.27	-3.08	
CB2-1096	537.5	38268	-8.22	-3.34	23.93
CB2-1097	538	38361	-8.42	-3.25	
CB2-1098	538.5	38460	-8.32	-3.13	24.15
CB2-1099	539	38563	-8.28	-3.04	
CB2-1100	539.5	38670	-8.46	-3.33	25.76

CB2-1101	540	38781	-8.37	-3.14	
CB2-1102	540.5	38896	-8.03	-3.05	26.8
CB2-1103	541	39013	-7.87	-2.93	
CB2-1104	541.5	39134	-8.55	-3.26	29.1
CB2-1105	542	39256	-8.73	-3.18	
CB2-1106	542.5	39381	-9.67	-3.42	19.76
CB2-1107	543	39508	-9.67	-3.34	
CB2-1108	543.5	39636	-10.08	-3.63	20.4
CB2-1109	544	39765	-9.9	-3.26	
CB2-1110	544.5	39895	-8.4	-3.2	31.91
CB2-1111	545	40026	-8.05	-3	
CB2-1112	545.5	40156	-8.07	-3.26	37.34
CB2-1113	546	40286	-8.41	-3.25	
CB2-1114	546.5	40416	-8.57	-3.18	31.75
CB2-1115	547	40544	-8.51	-3.19	
CB2-1116	547.5	40671	-8.57	-3.3	34.61
CB2-1117	548	40797	-8.03	-3.19	
CB2-1118	548.5	40920	-7.66	-3.06	30.71
CB2-1119	549	41041	-7.44	-3.17	
CB2-1120	549.5	41160	-7.7	-3.04	31.29
CB2-1121	550	41275	-7.86	-3.16	
CB2-1122	550.5	41387	-7.45	-3.07	27.8
CB2-1123	551	41496	-7.7	-3.17	
CB2-1124	551.5	41600	-7.54	-3.23	29.8
CB2-1125	552	41700	-7.15	-3.21	
CB2-1126	552.5	41795	-7.08	-3.28	27.37
CB2-1127	553	41885	-7.14	-3.16	
CB2-1128	553.5	41970	-8.28	-3.61	23.56
CB2-1129	554	42049	-7.83	-3.31	
CB2-1130	554.5	42122	-8	-3.49	22.97
CB2-1131	555	42188	-8.1	-3.18	
CB2-1132	555.5	42247	-7.78	-3.2	28.24
CB2-1133	556	42300	-7.28	-3.02	
CB2-1134	556.5	42348	-7.18	-2.83	27.75
CB2-1135	557	42395	-6.66	-2.69	
CB2-1136	557.5	42441	-6.34	-3.02	35.79

CB2-1137	558	42485	-6.08	-2.55	
CB2-1138	558.5	42529	-6.52	-2.56	30.36
CB2-1139	559	42572	-6.51	-2.68	
CB2-1140	559.5	42614	-6.97	-2.94	31.28
CB2-1141	560	42656	-7.01	-2.85	
CB2-1142	560.5	42696	-6.96	-2.72	30.34
CB2-1143	561	42736	-6.83	-2.68	
CB2-1144	561.5	42775	-7.1	-2.94	30.6
CB2-1145	562	42814	-6.91	-2.57	
CB2-1146	562.5	42852	-6.9	-2.67	29.04
CB2-1147	563	42890	-6.86	-2.65	
CB2-1148	563.5	42927	-7.4	-2.85	32.35
CB2-1149	564	42964	-7.44	-2.84	
CB2-1150	564.5	43001	-7.35	-2.83	29.58
CB2-1151	565	43037	-7.51	-2.79	
CB2-1152	565.5	43073	-7.52	-2.95	35.39
CB2-1153	566	43110	-7.61	-2.63	
CB2-1154	566.5	43146	-7.98	-3.2	26.24
CB2-1155	567	43182	-7.52	-3.28	
CB2-1156	567.5	43218	-7.85	-3.56	23.88
CB2-1157	568	43255	-7.46	-3.3	
CB2-1158	568.5	43291	-7.62	-3.31	25.22
CB2-1159	569	43328	-7.22	-3.28	
CB2-1160	569.5	43366	-7.27	-3.61	33.07
CB2-1161	570	43403	-7.44	-3.46	
CB2-1162	570.5	43441	-8.06	-3.37	27.15
CB2-1163	571	43480	-9.17	-3.37	
CB2-1164	571.5	43519	-9.68	-3.78	33.59
CB2-1165	572	43558	-9.57	-3.32	
CB2-1166	572.5	43599	-9.41	-3.33	30.97
CB2-1167	573	43640	-9.68	-3.42	
CB2-1168	573.5	43681	-9.67	-3.98	28.79
CB2-1169	574	43724	-9.75	-3.44	
CB2-1170	574.5	43768	-10.66	-3.9	20.94
CB2-1171	575	43812	-10.35	-3.91	
CB2-1172	575.5	43858	-10.36	-4.41	22.21

CB2-1173	576	43904	-10.25	-4.05	
CB2-1174	576.5	43952	-10.05	-3.98	20.16
CB2-1175	577	44001	-9.73	-3.82	
CB2-1176	577.5	44064	-9.76	-3.97	28.26
CB2-1177	578	44152	-9.87	-3.64	
CB2-1178	578.5	44258	-9.76	-3.43	27.22
CB2-1179	579	44376	-9.58	-3.56	
CB2-1180	579.5	44500	-9.57	-3.97	26.17
CB2-1181	580	44624	-8.66	-3.39	
CB2-1182	580.5	44742	-8.21	-3.35	25.48
CB2-1183	581	44848	-7.68	-3.49	
CB2-1184	581.5	44935	-7.39	-3.95	29.5
CB2-1185	582	44998	-7.15	-3.65	
CB2-1186	582.5	45046	-7.05	-3.58	26.61
CB2-1187	583	45095	-7.23	-3.76	
CB2-1188	583.5	45144	-7.47	-4.06	28.64
CB2-1189	584	45193	-7.15	-3.66	
CB2-1190	584.5	45243	-7.09	-3.59	24.88
CB2-1191	585	45292	-7.13	-3.68	
CB2-1192	585.5	45342	-7.6	-3.87	28.27
CB2-1193	586	45391	-7.97	-3.55	
CB2-1194	586.5	45441	-7.83	-3.52	23.11
CB2-1195	587	45490	-7.84	-3.4	
CB2-1196	587.5	45539	-7.97	-3.61	27.25
CB2-1197	588	45588	-7.72	-3.61	
CB2-1198	588.5	45636	-7.55	-3.62	25.48
CB2-1199	589	45684	-7.67	-3.62	
CB2-1200	589.5	45732	-7.85	-4	30.05
CB2-1201	590	45779	-7.77	-3.44	
CB2-1202	590.5	45826	-7.88	-3.31	28.04
CB2-1203	591	45872	-8.13	-3.3	
CB2-1204	591.5	45918	-8.46	-3.85	27.32
CB2-1205	592	45963	-8.38	-3.39	
CB2-1206	592.5	46007	-8.31	-3.59	25.38
CB2-1207	593	46051	-8.57	-3.45	
CB2-1208	593.5	46094	-8.5	-3.73	28.02

CB2-1209	594	46136	-8.96	-3.54	
CB2-1210	594.5	46177	-9.26	-3.54	21.51
CB2-1211	595	46217	-9.06	-3.64	
CB2-1212	595.5	46256	-8.56	-3.64	28.06
CB2-1213	596	46294	-8.46	-3.4	
CB2-1214	596.5	46331	-8.62	-3.35	28.32
CB2-1215	597	46367	-8.58	-3.27	
CB2-1216	597.5	46402	-8.52	-3.79	28.58
CB2-1217	598	46435	-8.42	-3.65	
CB2-1218	598.5	46467	-8.51	-3.74	24.04
CB2-1219	599	46498	-8.48	-3.67	
CB2-1220	599.5	46528	-8.88	-4.22	23.64
CB2-1221	600	46555	-8.89	-3.88	
CB2-1222	600.5	46582	-9.02	-3.7	23.43
CB2-1223	601	46607	-8.92	-3.5	
CB2-1224	601.5	46630	-9.18	-3.79	25.94
CB2-1225	602	46652	-8.99	-3.22	
CB2-1226	602.5	46672	-8.95	-3.26	25.87
CB2-1227	603	46690	-9.08	-3.14	
CB2-1228	603.5	46707	-9.26	-3.62	28.83
CB2-1229	604	46724	-9.15	-3.31	
CB2-1230	604.5	46741	-9.44	-3.42	22.32
CB2-1231	605	46757	-9.36	-3.39	
CB2-1232	605.5	46773	-10.26	-4.13	19.06
CB2-1233	606	46788	-10.5	-3.68	
CB2-1234	606.5	46804	-10.03	-3.55	17.88
CB2-1235	607	46819	-9.42	-3.36	
CB2-1236	607.5	46834	-9.39	-3.77	27.7
CB2-1237	608	46848	-8.63	-3.4	
CB2-1238	608.5	46863	-9.15	-3.51	22.69
CB2-1239	609	46877	-9.76	-3.6	
CB2-1240	609.5	46891	-9.85	-4.03	21.07
CB2-1241	610	46905	-9.03	-3.45	
CB2-1242	610.5	46919	-9.08	-3.48	24.96
CB2-1243	611	46932	-8.9	-3.48	
CB2-1244	611.5	46946	-8.92	-3.68	28.94

CB2-1245	612	46959	-8.96	-3.23	
CB2-1246	612.5	46972	-9.18	-3.39	23.31
CB2-1247	613	46985	-9.81	-3.6	
CB2-1248	613.5	46999	-9.63	-4.15	22.65
CB2-1249	614	47011	-9.06	-3.47	
CB2-1250	614.5	47024	-8.85	-3.58	24.98
CB2-1251	615	47037	-8.84	-3.56	
CB2-1252	615.5	47050	-9.3	-4.04	25.01
CB2-1253	616	47063	-10.12	-3.68	
CB2-1254	616.5	47076	-10.3	-4.15	18.83
CB2-1255	617	47088	-9.66	-3.8	
CB2-1256	617.5	47101	-9.64	-4.05	22.32
CB2-1257	618	47114	-9.66	-3.66	
CB2-1258	618.5	47127	-9.1	-3.6	25.28
CB2-1259	619	47140	-9.06	-3.55	
CB2-1260	619.5	47153	-9.19	-3.78	27.64
CB2-1261	620	47166	-8.91	-3.22	
CB2-1262	620.5	47179	-8.77	-3.16	31.77
CB2-1263	621	47192	-8.78	-3.19	
CB2-1264	621.5	47206	-9.11	-3.55	27.97
CB2-1265	622	47219	-8.76	-2.96	
CB2-1266	622.5	47233	-8.6	-3.12	30.15
CB2-1267	623	47247	-8.96	-2.98	
CB2-1268	623.5	47261	-9.06	-3.47	29.03
CB2-1269	624	47275	-8.62	-3.14	
CB2-1270	624.5	47290	-8.48	-3.12	31.29
CB2-1271	625	47304	-8.33	-2.98	
CB2-1272	625.5	47319	-8.56	-3.58	29.49
CB2-1273	626	47335	-8.52	-3.18	
CB2-1274	626.5	47351	-8.53	-3.27	29.74
CB2-1275	627	47367	-8.4	-3.2	
CB2-1276	627.5	47384	-8.4	-3.29	32.07
CB2-1277	628	47400	-8.36	-3.05	
CB2-1278	628.5	47418	-8.41	-3.09	32.59
CB2-1279	629	47435	-8.61	-3.13	
CB2-1280	629.5	47453	-8.82	-3.5	28.76

CB2-1281	630	47471	-8.72	-3.14	
CB2-1282	630.5	47489	-8.55	-2.94	28.74
CB2-1283	631	47508	-8.4	-3.02	
CB2-1284	631.5	47527	-8.44	-3.03	17.86
CB2-1285	632	47547	-7.44	-3.31	
CB2-1286	632.5	47566	-7.55	-3.15	34.77
CB2-1287	633	47586	-7.42	-3.18	
CB2-1288	633.5	47606	-7.54	-3.39	34.07
CB2-1289	634	47627	-7.58	-3.08	
CB2-1290	634.5	47648	-7.53	-3.09	34.98
CB2-1291	635	47669	-7.75	-3.28	
CB2-1292	635.5	47690	-7.82	-3.38	31.37
CB2-1293	636	47711	-7.94	-3.17	
CB2-1294	636.5	47733	-7.93	-3.08	31.5
CB2-1295	637	47755	-8.07	-3.13	
CB2-1296	637.5	47778	-8.04	-3.29	31.47
CB2-1297	638	47800	-8.13	-3.1	
CB2-1298	638.5	47823	-7.9	-3.03	31.38
CB2-1299	639	47846	-7.18	-2.95	
CB2-1300	639.5	47869	-6.82	-3.36	30.81
CB2-1301	640	47893	-6.78	-3.08	
CB2-1302	640.5	47917	-6.95	-3.1	32.87
CB2-1303	641	47941	-7.48	-3.23	
CB2-1304	641.5	47965	-7.6	-3.12	32.83
CB2-1305	642	47989	-7.46	-2.87	
CB2-1306	642.5	48014	-7.43	-2.97	31.99
CB2-1307	643	48039	-7.26	-2.97	
CB2-1308	643.5	48064	-7.26	-3.39	30.48
CB2-1309	644	48089	-7.68	-3.2	
CB2-1310	644.5	48115	-7.84	-3.11	29.72
CB2-1311	645	48140	-7.97	-3.1	
CB2-1312	645.5	48166	-8.04	-3.16	31.23
CB2-1313	646	48192	-7.82	-2.93	
CB2-1314	646.5	48218	-7.63	-2.57	31.38
CB2-1315	647	48245	-7.62	-2.64	
CB2-1316	647.5	48271	-7.63	-3.15	30.54

CB2-1317	648	48298	-8.12	-3.02	
CB2-1318	648.5	48325	-8.07	-3.03	28.44
CB2-1319	649	48352	-7.75	-2.75	
CB2-1320	649.5	48379	-7.86	-3.09	30.81
CB2-1321	650	48406	-7.72	-2.66	
CB2-1322	650.5	48434	-7.4	-2.47	29.42
CB2-1323	651	48461	-7.39	-2.48	
CB2-1324	651.5	48489	-7.73	-3.07	30.26
CB2-1325	652	48517	-7.9	-3.16	
CB2-1326	652.5	48545	-7.85	-3.47	
CB2-1327	653	48573	-7.88	-3.57	
CB2-1328	653.5	48601	-8.06	-3.74	30.89
CB2-1329	654	48630	-7.65	-3.61	
CB2-1330	654.5	48658	-7.75	-3.42	30.52
CB2-1331	655	48687	-8.01	-3.29	
CB2-1332	655.5	48716	-8.14	-3.34	33.74
CB2-1333	656	48745	-8.73	-3.65	
CB2-1334	656.5	48774	-9.03	-3.81	32.52
CB2-1335	657	48803	-9.32	-3.97	
CB2-1336	657.5	48832	-8.44	-3.45	30.3
CB2-1337	658	48861	-9.73	-4.26	
CB2-1338	658.5	48890	-9.15	-3.99	30.1
CB2-1339	659	48920	-9.47	-3.96	
CB2-1340	659.5	48949	-7.82	-3.41	31.72
CB2-1341	660	48978	-10.34	-3.93	
CB2-1342	660.5	49008	-10.62	-3.74	27.46
CB2-1343	661	49038	-10.59	-3.74	
CB2-1344	661.5	49067	-8.64	-3.05	29.68
CB2-1345	662	49097	-10.29	-3.89	
CB2-1346	662.5	49127	-10.44	-3.93	28.66
CB2-1347	663	49157	-10.3	-3.7	
CB2-1348	663.5	49187	-8.54	-3.2	29.92
CB2-1349	664	49217	-10.5	-4.06	
CB2-1350	664.5	49247	-10.39	-4	27.64
CB2-1351	665	49277	-10.36	-3.89	
CB2-1352	665.5	49307	-8.7	-3.47	29.25

CB2-1353	666	49337	-10.75	-3.85	
CB2-1354	666.5	49367	-10.95	-3.89	25.5
CB2-1355	667	49399	-10.63	-4.3	
CB2-1356	667.5	49431	-8.5	-3.28	28.63
CB2-1357	668	49464	-10.44	-4.16	
CB2-1358	668.5	49498	-10.63	-4.29	25.47
CB2-1359	669	49532	-10.69	-4.22	
CB2-1360	669.5	49568	-8.88	-3.55	27.88
CB2-1361	670	49604	-11.02	-4.19	
CB2-1362	670.5	49640	-10.98	-4.26	26.93
CB2-1363	671	49678	-11.01	-4.43	
CB2-1364	671.5	49716	-9.15	-3.32	28.44
CB2-1365	672	49754	-10.98	-4.29	
CB2-1366	672.5	49794	-10.82	-4.28	25.34
CB2-1367	673	49833	-9.17	-3.3	
CB2-1368	673.5	49874	-9.05	-3.43	27.6
CB2-1369	674	49914	-9.18	-2.97	
CB2-1370	674.5	49956	-9.12	-3.17	27.47
CB2-1371	675	49997	-9.19	-3.09	
CB2-1372	675.5	50039	-9.28	-3.39	27.34
CB2-1373	676	50082	-9.44	-3.22	
CB2-1374	676.5	50125	-9.48	-3.2	25.15
CB2-1375	677	50168	-9.33	-3.36	
CB2-1376	677.5	50212	-9.26	-3.57	28.57
CB2-1377	678	50255	-9.16	-3.42	
CB2-1378	678.5	50300	-9.1	-3.29	27.02
CB2-1379	679	50344	-9.36	-3.26	
CB2-1380	679.5	50388	-9.53	-3.44	26.23
CB2-1381	680	50433	-9.36	-3.28	
CB2-1382	680.5	50478	-9.38	-3.3	25.48
CB2-1383	681	50523	-9.65	-3.24	
CB2-1384	681.5	50568	-9.69	-3.55	26.53
CB2-1385	682	50613	-9.57	-3.11	
CB2-1386	682.5	50659	-9.54	-3.24	27.22
CB2-1387	683	50704	-9.47	-3.23	
CB2-1388	683.5	50749	-8.95	-3.37	27.9

CB2-1389	684	50794	-9.46	-3.19	
CB2-1390	684.5	50840	-9.48	-3.11	25.29
CB2-1391	685	50885	-9.61	-3.09	
CB2-1392	685.5	50930	-8.98	-3.28	26.95
CB2-1393	686	50975	-9.61	-3.09	
CB2-1394	686.5	51019	-9.7	-3.11	24.94
CB2-1395	687	51064	-9.38	-3.27	
CB2-1396	687.5	51108	-9.3	-3.46	28.51
CB2-1397	688	51152	-9.31	-3.1	
CB2-1398	688.5	51196	-9.31	-2.97	28.68
CB2-1399	689	51239	-9.53	-3.14	
CB2-1400	689.5	51283	-9.59	-3.49	29.05
CB2-1401	690	51325	-10.21	-3.57	
CB2-1402	690.5	51368	-10.25	-3.32	26.15
CB2-1403	691	51412	-10.08	-3.34	
CB2-1404	691.5	51456	-10.25	-3.57	25.82
CB2-1405	692	51500	-10.07	-3.47	
CB2-1406	692.5	51545	-9.95	-3.13	24.51
CB2-1407	693	51590	-9.85	-3.01	
CB2-1408	693.5	51635	-9.89	-3.22	26.85
CB2-1409	694	51681	-9.55	-3.01	
CB2-1410	694.5	51727	-9.07	-3.01	29.19
CB2-1411	695	51773	-9.35	-2.99	
CB2-1412	695.5	51820	-9.76	-2.99	30.76
CB2-1413	696	51867	-10.16	-3.17	
CB2-1414	696.5	51914	-10.32	-3.21	23.2
CB2-1415	697	51961	-10.1	-3.16	
CB2-1416	697.5	52008	-10.11	-3.32	28.82
CB2-1417	698	52056	-10.02	-3.32	
CB2-1418	698.5	52103	-9.67	-3.37	27.75
CB2-1419	699	52151	-9.61	-3.27	
CB2-1420	699.5	52199	-9.98	-3.46	25.67
CB2-1421	700	52247	-10.04	-3.29	
CB2-1422	700.5	52295	-9.94	-2.95	25.32
CB2-1423	701	52342	-9.99	-3.13	
CB2-1424	701.5	52390	-10.06	-3.39	24.89

CB2-1425	702	52438	-9.7	-3.15	
CB2-1426	702.5	52485	-10.01	-3.05	27.22
CB2-1427	703	52533	-10.2	-3.11	
CB2-1428	703.5	52580	-10.4	-3.57	24.8
CB2-1429	704	52627	-10.39	-3.15	
CB2-1430	704.5	52675	-10.35	-3.2	23.28
CB2-1431	705	52721	-10.35	-3.02	
CB2-1432	705.5	52768	-10.24	-3.28	27.01
CB2-1433	706	52814	-10	-3.15	
CB2-1434	706.5	52860	-10.13	-3.05	26.64
CB2-1435	707	52906	-10.19	-3.17	
CB2-1436	707.5	52951	-10.46	-3.6	26.7
CB2-1437	708	52996	-10.37	-3.07	
CB2-1438	708.5	53041	-10.32	-3.21	26.83
CB2-1439	709	53085	-10.31	-3.09	
CB2-1440	709.5	53130	-10.33	-3.27	27.29
CB2-1441	710	53175	-10.22	-2.99	
CB2-1442	710.5	53220	-10.33	-3.17	26.26
CB2-1443	711	53267	-10.13	-3.19	
CB2-1444	711.5	53314	-10.05	-3.53	30.7
CB2-1445	712	53361	-10.17	-3.21	
CB2-1446	712.5	53409	-10.37	-3.08	27.29
CB2-1447	713	53457	-10.3	-3.12	
CB2-1448	713.5	53506	-10.2	-3.36	26.62
CB2-1449	714	53554	-10.1	-2.99	
CB2-1450	714.5	53603	-10.02	-2.97	29.2
CB2-1451	715	53653	-10.11	-2.92	
CB2-1452	715.5	53702	-10.52	-3.3	27.16
CB2-1453	716	53752	-10.42	-3.11	
CB2-1454	716.5	53801	-10.44	-3.15	25.68
CB2-1455	717	53851	-10.41	-3.24	
CB2-1456	717.5	53900	-10.49	-3.54	27.17
CB2-1457	718	53950	-10.5	-3.16	
CB2-1458	718.5	53999	-10.43	-3.11	28.66
CB2-1459	719	54048	-10.37	-3.05	
CB2-1460	719.5	54096	-10.41	-3.22	28.55

CB2-1461	720	54145	-10.36	-3.01	
CB2-1462	720.5	54193	-10.44	-2.93	26.17
CB2-1463	721	54240	-10.4	-2.92	
CB2-1464	721.5	54287	-10.53	-3.02	26.57
CB2-1465	722	54334	-10.07	-2.92	
CB2-1466	722.5	54380	-10.29	-2.83	28.39
CB2-1467	723	54425	-10.68	-3.12	
CB2-1468	723.5	54470	-10.74	-3.55	27.93
CB2-1469	724	54514	-11.04	-3.37	
CB2-1470	724.5	54557	-11.1	-3.37	20.28
CB2-1471	725	54599	-11.22	-3.22	
CB2-1472	725.5	54640	-10.99	-3.39	21.24
CB2-1473	726	54681	-10.61	-3.49	
CB2-1474	726.5	54720	-10.69	-3.51	24.63
CB2-1475	727	54758	-10.93	-3.63	
CB2-1476	727.5	54796	-10.87	-3.71	26.58
CB2-1477	728	54832	-10.92	-3.45	
CB2-1478	728.5	54867	-10.82	-3.53	26.89
CB2-1479	729	54900	-11.12	-3.64	
CB2-1480	729.5	54933	-11.24	-3.73	25.22
CB2-1481	730	54964	-11.41	-3.62	
CB2-1482	730.5	54994	-11.29	-3.48	19.86
CB2-1483	731	55024	-11.1	-3.4	
CB2-1484	731.5	55053	-10.92	-3.53	28.25
CB2-1485	732	55082	-11	-3.4	
CB2-1486	732.5	55111	-10.95	-3.33	25.88
CB2-1487	733	55139	-10.79	-3.25	
CB2-1488	733.5	55168	-10.81	-3.45	26.81
CB2-1489	734	55196	-10.69	-3.26	
CB2-1490	734.5	55223	-10.71	-3.32	26.78
CB2-1491	735	55251	-10.72	-3.2	
CB2-1492	735.5	55278	-10.91	-3.39	26.75
CB2-1493	736	55305	-10.69	-2.93	
CB2-1494	736.5	55332	-10.48	-2.98	28.83
CB2-1495	737	55359	-10.63	-2.91	
CB2-1496	737.5	55385	-10.54	-3.03	27.79

CB2-1497	738	55411	-10.62	-3	
CB2-1498	738.5	55438	-10.65	-3.09	25.28
CB2-1499	739	55464	-10.3	-2.98	
CB2-1500	739.5	55489	-10.29	-3.26	30.18
CB2-1501	740	55515	-10.34	-3.3	
CB2-1502	740.5	55541			28.84
CB2-1503	741	55566	-10.9	-3.22	
CB2-1504	741.5	55592	-11.04	-3.47	24.32
CB2-1505	742	55617	-11.1	-3.33	
CB2-1506	742.5	55643	-10.84	-3.11	27.01
CB2-1507	743	55668	-10.6	-3.14	
CB2-1508	743.5	55693	-10.34	-3.18	30.93
CB2-1509	744	55719	-10.33	-3.01	
CB2-1510	744.5	55744	-10.19	-3.17	30.06
CB2-1511	745	55769	-10.26	-3.07	
CB2-1512	745.5	55795	-10.4	-3.43	29.2
CB2-1513	746	55820	-10.39	-3.07	
CB2-1514	746.5	55846	-10.15	-3.08	28.43
CB2-1515	747	55871	-10.2	-3.38	
CB2-1516	747.5	55897	-10.41	-3.49	25.96
CB2-1517	748	55923	-10.24	-3.37	
CB2-1518	748.5	55948	-9.93	-3.06	30.68
CB2-1519	749	55974	-10.02	-3.15	
CB2-1520	749.5	56000	-10.03	-3.26	32.8
CB2-1521	750	56027	-9.94	-2.88	
CB2-1522	750.5	56053	-10.15	-3.19	25.5
CB2-1523	751	56080	-10.08	-3.12	
CB2-1524	751.5	56106	-10.46	-3.57	23.15
CB2-1525	752	56133	-10.31	-3.18	
CB2-1526	752.5	56160	-10.11	-3.08	
CB2-1527	753	56188	-10.01	-3.01	
CB2-1528	753.5	56215	-9.98	-3.38	26.99
CB2-1529	754	56243	-9.95	-2.97	
CB2-1530	754.5	56272	-9.75	-3.06	28.25
CB2-1531	755	56301	-9.7	-3.2	
CB2-1532	755.5	56332	-9.6	-3.49	28.68

CB2-1533	756	56364	-9.53	-3.09	
CB2-1534	756.5	56397	-9.4	-3.2	29.26
CB2-1535	757	56431	-9.48	-3.28	
CB2-1536	757.5	56467	-9.37	-3.37	28.84
CB2-1537	758	56503	-9.21	-3.08	
CB2-1538	758.5	56540			26.66
CB2-1539	759	56578	-9.28	-3.05	
CB2-1540	759.5	56617	-9.48	-3.78	26.81
CB2-1541	760	56657	-9.32	-3.41	
CB2-1542	760.5	56698			26
CB2-1543	761	56739	-9.41	-3.55	
CB2-1544	761.5	56782	-9.51	-3.96	24.15
CB2-1545	762	56825	-9.46	-3.44	
CB2-1546	762.5	56869	-9.59	-3.51	26.23
CB2-1547	763	56913	-9.18	-3.16	
CB2-1548	763.5	56958	-8.93	-3.31	28.68
CB2-1549	764	57004	-9.35	-3.47	
CB2-1550	764.5	57050	-9.31	-3.22	23.28
CB2-1551	765	57097	-9.22	-3.26	
CB2-1552	765.5	57145	-9.35	-3.62	27.25
CB2-1553	766	57193	-9.05	-3.27	
CB2-1554	766.5	57241	-9.05	-3.18	24.07
CB2-1555	767	57290	-8.79	-3.2	
CB2-1556	767.5	57340	-8.85	-3.83	26.98
CB2-1557	768	57389	-8.79	-3.34	
CB2-1558	768.5	57440	-8.94	-3.48	23.8
CB2-1559	769	57490	-8.94	-3.34	
CB2-1560	769.5	57541	-8.73	-3.26	27.69
CB2-1561	770	57592	-8.79	-3.01	
CB2-1562	770.5	57643	-8.76	-2.84	29.12
CB2-1563	771	57694	-8.78	-3.03	
CB2-1564	771.5	57746	-8.83	-3.36	29.33
CB2-1565	772	57798	-8.73	-2.81	
CB2-1566	772.5	57849	-8.58	-2.89	28.42
CB2-1567	773	57901	-8.48	-2.89	
CB2-1568	773.5	57953			27.84

CB2-1569	774	58005	-8.54	-2.97	
CB2-1570	774.5	58057	-8.3	-2.87	27.16
CB2-1571	775	58109	-8.32	-2.87	
CB2-1572	775.5	58161	-8.41	-3.03	30.62
CB2-1573	776	58213	-8.29	-2.6	
CB2-1574	776.5	58264	-8.41	-2.69	31.65
CB2-1575	777	58316	-8.69	-2.96	
CB2-1576	777.5	58367	-8.72	-3.29	33.01
CB2-1577	778	58418	-8.65	-2.95	
CB2-1578	778.5	58469	-8.61	-2.89	

Table S3: CB2 Speleothem proxies. Every 32 samples of unknown composition were analyzed with 14 standards which included a mix of NBS-18, IAEA-CO-1, and an in-house standard for $\delta^{18}O$ and $\delta^{13}C$. The analytical precision for $\delta^{18}O$ and $\delta^{13}C$ is 0.08‰ and 0.05‰, respectively. Mg/Ca ratios were calculated from the intensity ratios using a bracketing technique with five standards of known concentration and an internal standard (Ge) added to all samples to correct for instrumental drift. Trace element analysis of CB2 serves to complement the interpretation of speleothem $\delta^{18}O$ and $\delta^{13}C$; therefore, only every other sample was analyzed.