Laguna de Padul Data: MI and P_ann corrections

(37.0108, -3.6039)

Reconstruct past temperature from `T_djf` and `T_jja`:

```
padul <- readr::read_csv("/path/to/padul.csv")
```

Calculate daily mean temperature

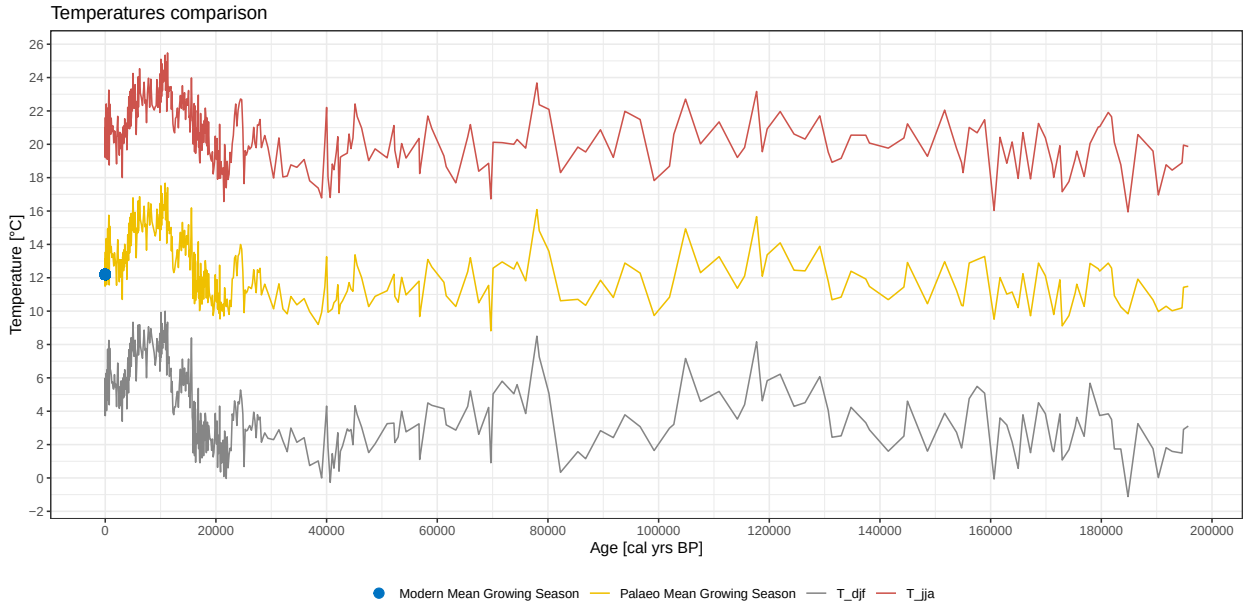
```
padul_tmp <- rowMeans(padul[, c("T_djf", "T_jja")])
palaeo_MGS_temp <- padul$Tgs
```

Obtain past CO2 from (Bereiter et al. 2015)

```
palaeo_co2 <- purrr::map_dbl(padul$age_cal_yr_BP, codos::past_co2)
```

Obtain modern CO2 from (Bereiter et al. 2015)

```
modern_co2 <- tibble::tibble(age = 1950 - c(1901:1990),
                             co2 = purrr::map_dbl(age, codos::past_co2)) %$%
  median(co2)
```



Assemble the *Laguna de Padul* dataset

```
padul2 <- tibble::tibble(age_calBP = padul$age_cal_yr_BP,
                         palaeo_co2 = palaeo_co2,
                         palaeo_MGS_temp = palaeo_MGS_temp,
                         modern_co2 = modern_co2,
                         modern_MGS_temp = mean(palaeo_MGS_temp[ref_idx]),
                         recon_mi = padul$MI,
                         recon_Pann = padul$P_ann)
```

Find the corrected `MI`

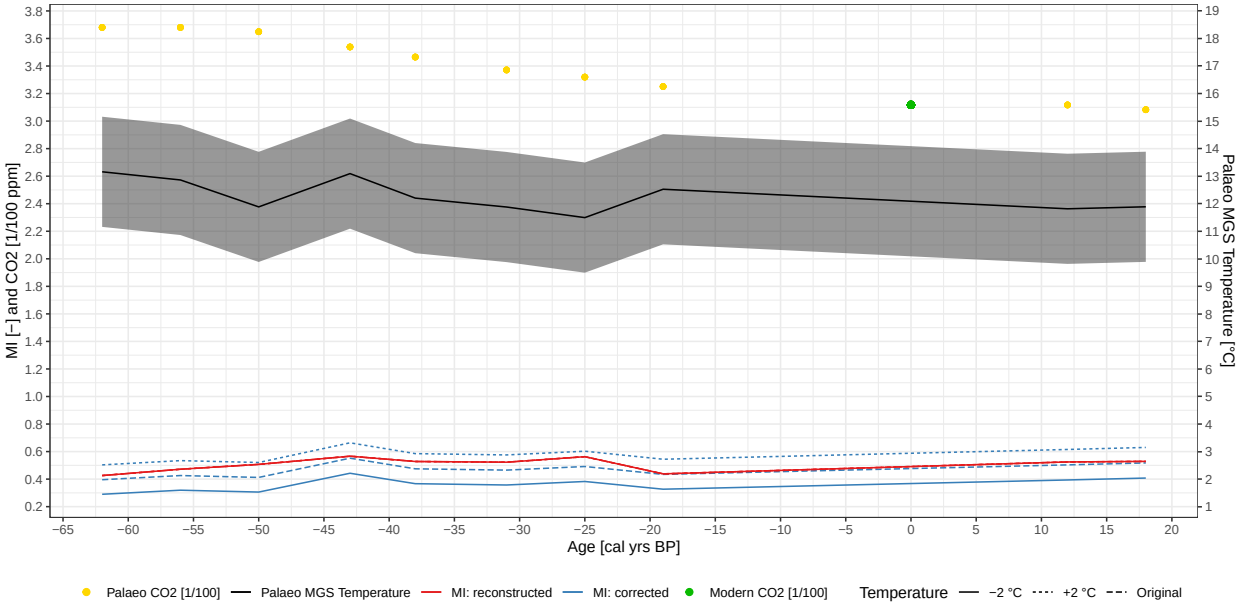
```
corr_mi <- padul2 %$%
  codos::corrected_mi(Tc0 = modern_MGS_temp,
                      Tc1 = palaeo_MGS_temp,
                      MI = recon_mi,
                      ca0 = modern_co2,
                      ca1 = palaeo_co2)
padul2 <- padul2 %>%
  dplyr::mutate(corr_mi = corr_mi)
```

Records for which the corrected MI is smaller than reconstructed MI

age cal yr BP	palaeo co2	palaeo MGS temp	modern co2	modern MGS temp	recon. MI	recon. Pann	corr. MI
-62	368.020	13.15918	311.765	12.19893	0.425809	458.807	0.3956459
-56	368.020	12.86272	311.765	12.19893	0.471798	506.622	0.4259131
-50	364.900	11.88472	311.765	12.19893	0.506921	570.575	0.4123184
-43	353.835	13.09339	311.765	12.19893	0.566461	630.212	0.5520437
-38	346.520	12.20387	311.765	12.19893	0.528049	553.384	0.4748576
-31	337.155	11.87980	311.765	12.19893	0.522880	521.380	0.4653719
-25	331.960	11.49567	311.765	12.19893	0.562884	576.799	0.4916622
-19	325.080	12.52563	311.765	12.19893	0.438233	494.120	0.4343545
12	311.730	11.81530	311.765	12.19893	0.524648	546.752	0.5034225
18	308.260	11.88823	311.765	12.19893	0.528909	540.303	0.5176301
3080	274.600	10.69931	311.765	12.19893	0.443022	540.029	0.4302155

Anomalous records

This plot shows the effect of increasing and decreasing the temperature by 2°C on the corrections of MI:

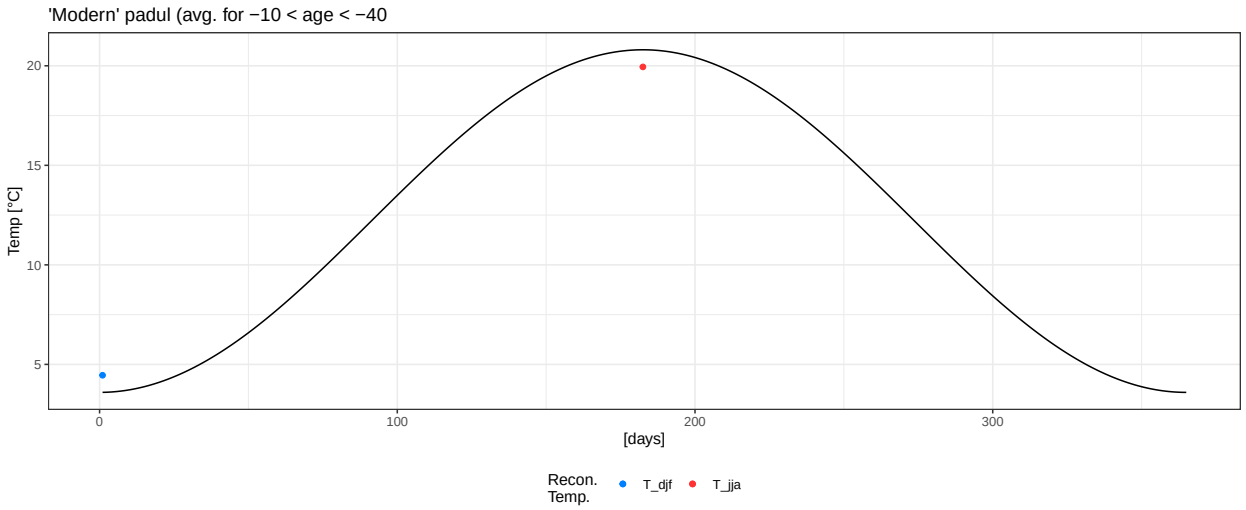


New corrections

Calculate temperature anomalies

Using both T_{djf} and T_{jja} for each record, a sinusoidal curve was fitted using the `int_sin` function.

```
padul <- padul %>%
  dplyr::mutate(Tmean = (T_jja + T_djf) / 2) %>%
  dplyr::mutate(Tmax = Tmean + (T_jja - Tmean) / 0.9) %>%
  dplyr::mutate(Tmin = Tmean + (T_djf - Tmean) / 0.9)
```



Rows 5:9 were used as the baseline to calculate the temperature anomalies.

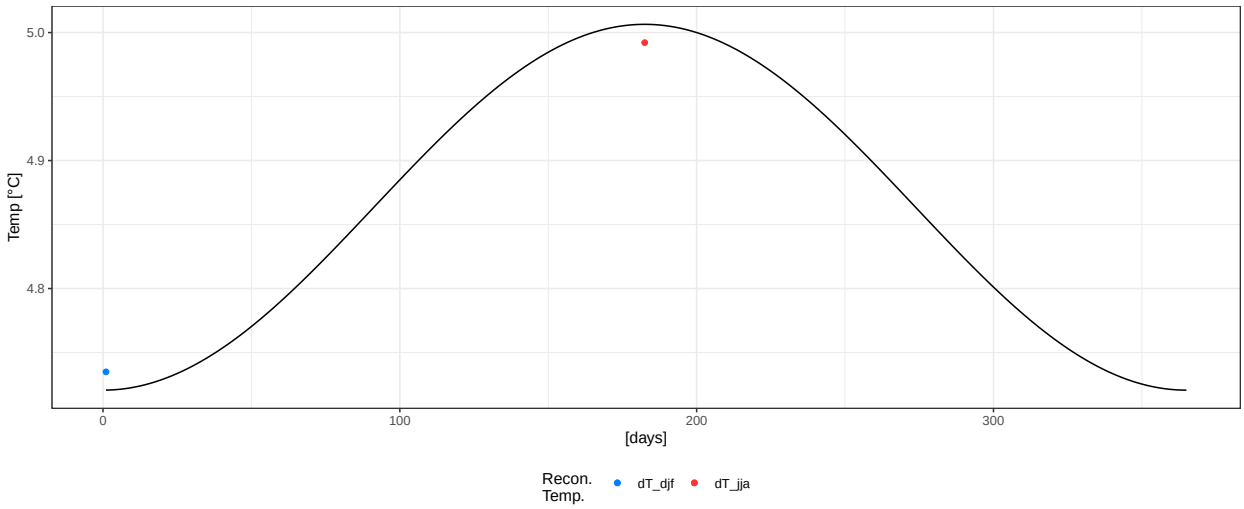
age_cal_yr_BP	MI	P_ann	T_djf	T_jja	Tmean	Tmax	Tmin	Tgs
-38	0.5280490	553.3840	4.408130	19.99960	12.20387	20.86579	3.541937	12.20387
-31	0.5228800	521.3800	3.954800	19.80480	11.87980	20.68536	3.074244	11.87980
-25	0.5628840	576.7990	3.768040	19.22330	11.49567	20.08193	2.909414	11.49567
-19	0.4382330	494.1200	5.015460	20.03580	12.52563	20.87026	4.180997	12.52563
-13	0.4683820	539.3250	5.126590	20.65280	12.88969	21.51537	4.264023	12.88969
	0.5040856	537.0016	4.454604	19.94326	12.19893	20.80374	3.594123	12.19893

where

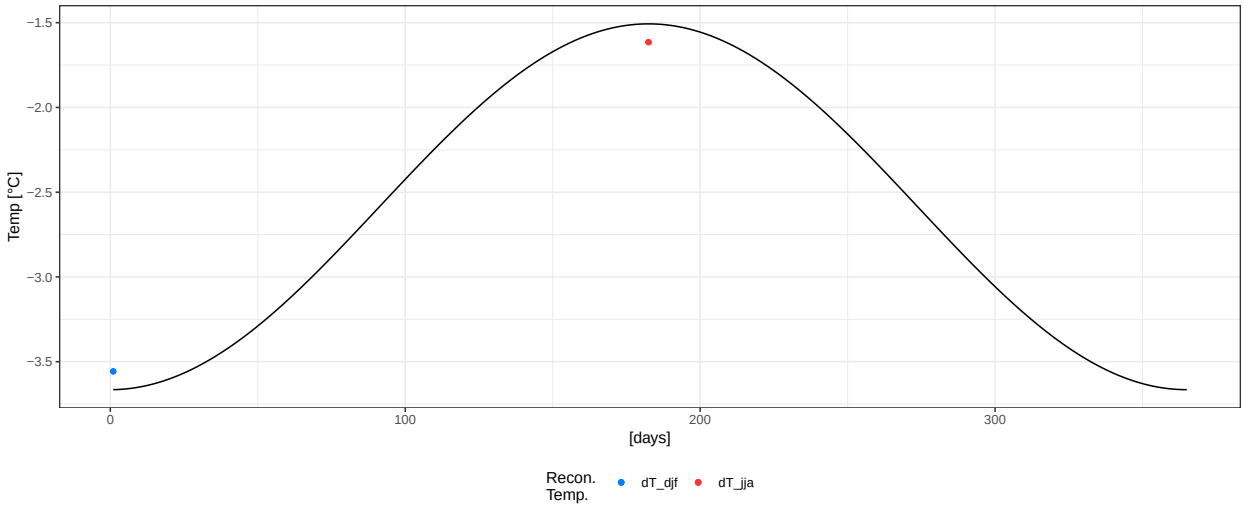
$$T_{\text{mean}} = (T_{\text{jja}} + T_{\text{djf}})/2$$
$$T_{\text{max}} = T_{\text{mean}} + (T_{\text{jja}} - T_{\text{mean}})/0.9$$
$$T_{\text{min}} = T_{\text{mean}} + (T_{\text{djf}} - T_{\text{mean}})/0.9$$

```
padul_anomalies <- seq_len(nrow(padul)) %>%
  purrr::map(~codos::int_sin(padul$Tmin[.x] - padul_modern$Tmin,
                             padul$Tmax[.x] - padul_modern$Tmax))
```

Padul: Anomaly for age = 11044 cal yr BP



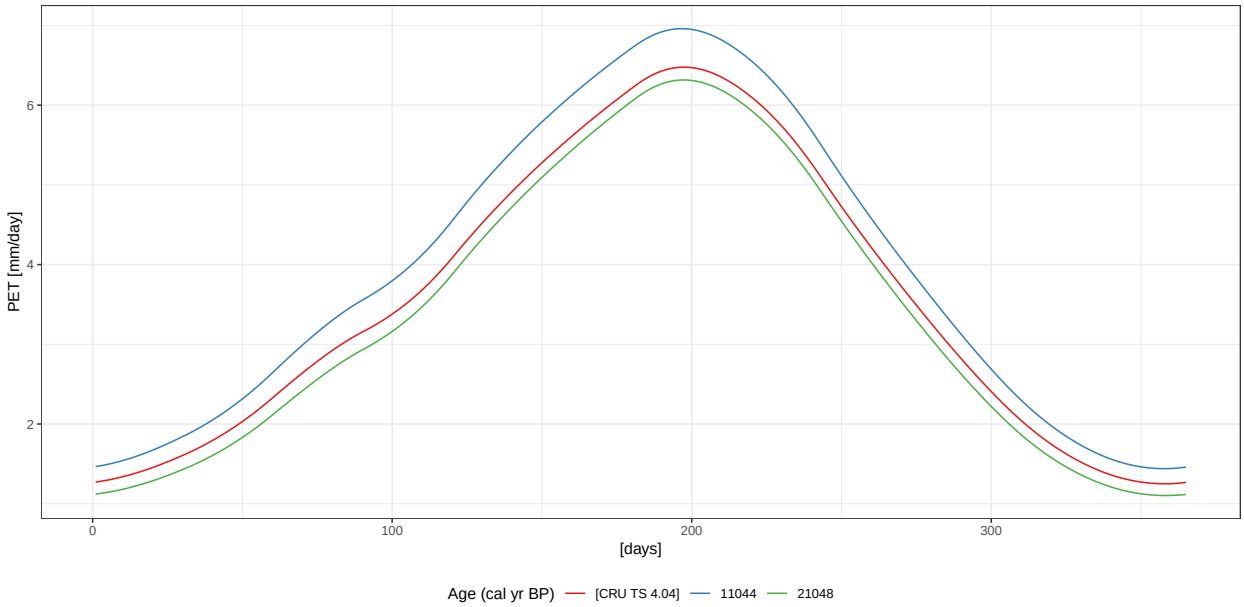
Padul: Anomaly for age = 21048 cal yr BP



Calculate potential evapotranspiration (PET)

Params (`splash::calc_daily_evap`)

- Latitude: 37.0108
- Elevation: 959
- Year: `1961`
- Sunshine fraction: [`CRU TS 4.04`]
- Temperature: [`CRU TS 4.04`] $+T_{\text{anomalies}}$



Calculate corrected Precipitation

Using corrected MI and PET (calculated from modern temperature [CRU TS 4.04] and Padul temperature anomalies).

$$\text{corrected } \mathrm{P}_{\text{ann}} = \mathrm{MI} \times \mathrm{PET}_{\text{ann}}$$

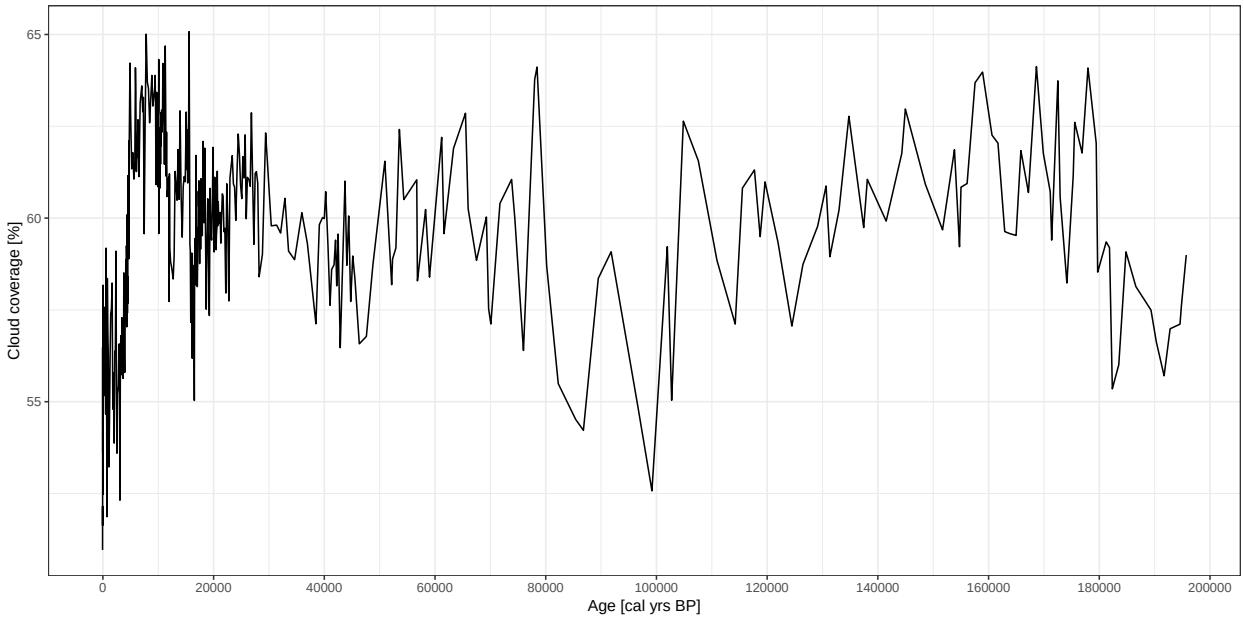
age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
-62	368.020	13.159180	311.765	12.19893	0.425809	458.807	0.3956459	525.9648
-56	368.020	12.862720	311.765	12.19893	0.471798	506.622	0.4259131	562.1496
-50	364.900	11.884725	311.765	12.19893	0.506921	570.575	0.4123184	532.8441
-43	353.835	13.093390	311.765	12.19893	0.566461	630.212	0.5520437	730.3022
-38	346.520	12.203865	311.765	12.19893	0.528049	553.384	0.4748576	618.5475
-31	337.155	11.879800	311.765	12.19893	0.522880	521.380	0.4653719	602.3693
-25	331.960	11.495670	311.765	12.19893	0.562884	576.799	0.4916622	630.4587
-19	325.080	12.525630	311.765	12.19893	0.438233	494.120	0.4343545	568.8791
-13	318.840	12.889695	311.765	12.19893	0.468382	539.325	0.4946022	653.5738

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
-6	315.340	13.130160	311.765	12.19893	0.483879	550.167	0.5293781	702.6961
-1	312.000	12.701260	311.765	12.19893	0.493117	550.058	0.5205401	685.0496
6	311.290	12.724970	311.765	12.19893	0.490124	523.334	0.5200635	684.8463
12	311.730	11.815300	311.765	12.19893	0.524648	546.752	0.5034225	651.2228
18	308.260	11.888230	311.765	12.19893	0.528909	540.303	0.5176301	669.1132
24	304.970	13.540305	311.765	12.19893	0.429877	459.993	0.5155983	691.4734
4679	269.800	14.456340	311.765	12.19893	0.477212	581.116	0.6885184	937.8493
4693	270.650	15.862295	311.765	12.19893	0.481918	551.825	0.7742774	1083.8043
4707	270.650	14.117130	311.765	12.19893	0.448255	542.514	0.6370201	861.8474
4723	270.650	14.411470	311.765	12.19893	0.462332	582.651	0.6685739	909.2581
4756	270.650	14.795020	311.765	12.19893	0.535625	621.786	0.7668665	1050.9845
4890	270.700	14.834370	311.765	12.19893	0.650277	719.723	0.8879217	1217.1184
11499	267.415	15.364930	311.765	12.19893	0.513904	551.458	0.7859144	1092.6483
11594	261.000	14.643270	311.765	12.19893	0.462316	437.416	0.7052983	968.9128
11888	253.730	15.016305	311.765	12.19893	0.445394	459.323	0.7284537	1007.4778
11954	251.455	13.614930	311.765	12.19893	0.389403	378.477	0.5944572	799.9482
12022	248.130	14.482675	311.765	12.19893	0.465376	479.259	0.7325416	1003.7231
12091	253.345	14.124780	311.765	12.19893	0.417931	412.517	0.6484974	881.4198
21433	186.235	9.707980	311.765	12.19893	0.490850	589.305	0.6804172	813.1454
21574	186.595	11.400080	311.765	12.19893	0.417916	390.909	0.7085158	910.6188
21716	186.595	10.645230	311.765	12.19893	0.460863	528.718	0.7058167	891.1021
21866	189.370	10.268613	311.765	12.19893	0.455234	449.707	0.6657582	804.6721
22031	189.080	10.720585	311.765	12.19893	0.430449	511.119	0.6693615	846.0182
22197	191.270	10.128333	311.765	12.19893	0.408191	417.690	0.6026146	737.9108
184818	199.700	9.837763	311.765	12.19893	0.499713	478.917	0.6441735	754.0188
186603	207.050	11.920440	311.765	12.19893	0.368120	373.086	0.6089746	791.8170
189340	221.000	10.674150	311.765	12.19893	0.464490	442.187	0.5862542	742.7900
190307	231.350	9.972993	311.765	12.19893	0.506649	612.275	0.5568394	669.0318
191709	225.850	10.294565	311.765	12.19893	0.442095	502.227	0.5273021	660.8826
192795	219.150	10.022120	311.765	12.19893	0.479334	474.041	0.5688464	708.3431
194581	226.500	10.191110	311.765	12.19893	0.496187	495.060	0.5730713	717.4119
194846	226.500	11.431140	311.765	12.19893	0.441957	453.222	0.5909473	759.7771
195710	223.250	11.487825	311.765	12.19893	0.478354	491.296	0.6408374	824.3387

Calculate cloud coverage from corrected MI

```
padul_cld_corr_mi <- padul2$corr_mi %>%
  purrr::map_dbl(codos::cld)
```

Padul: cloud coverage

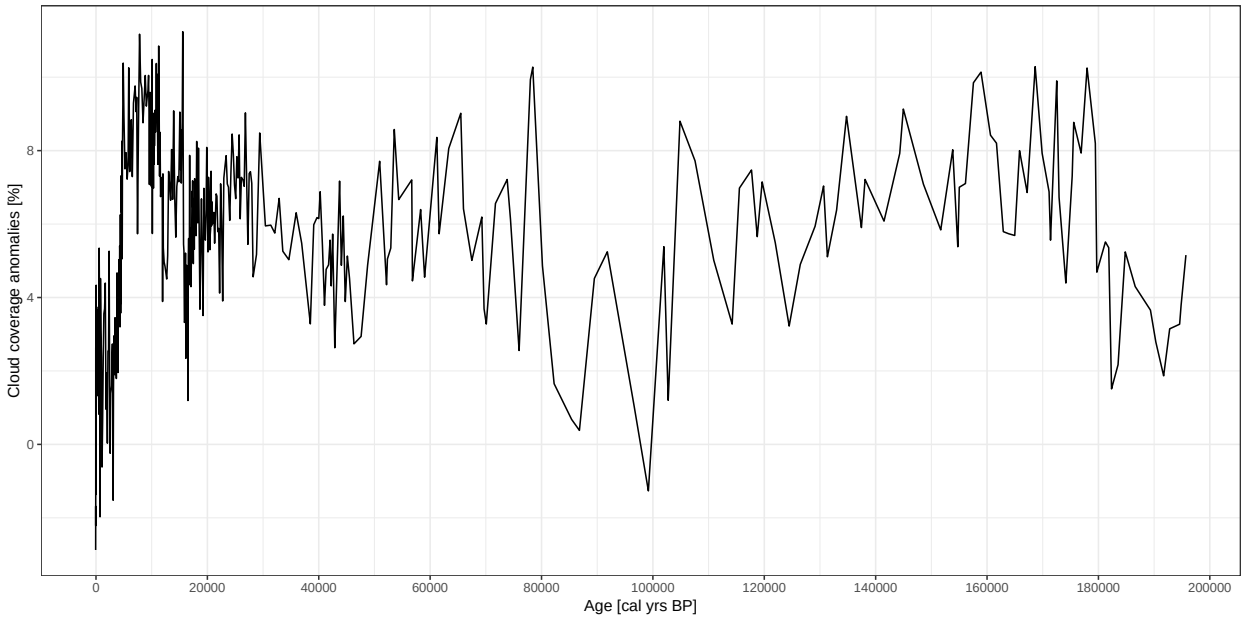


Calculate cloud coverage anomalies

Rows 5:9 were used as the baseline to calculate the anomalies:

```
padul_cld_anomalies <- seq_len(nrow(padul)) %>%
  purrr::map_dbl(~padul_cld_corr_mi[.x] - ref_cld_corr_mi)
```

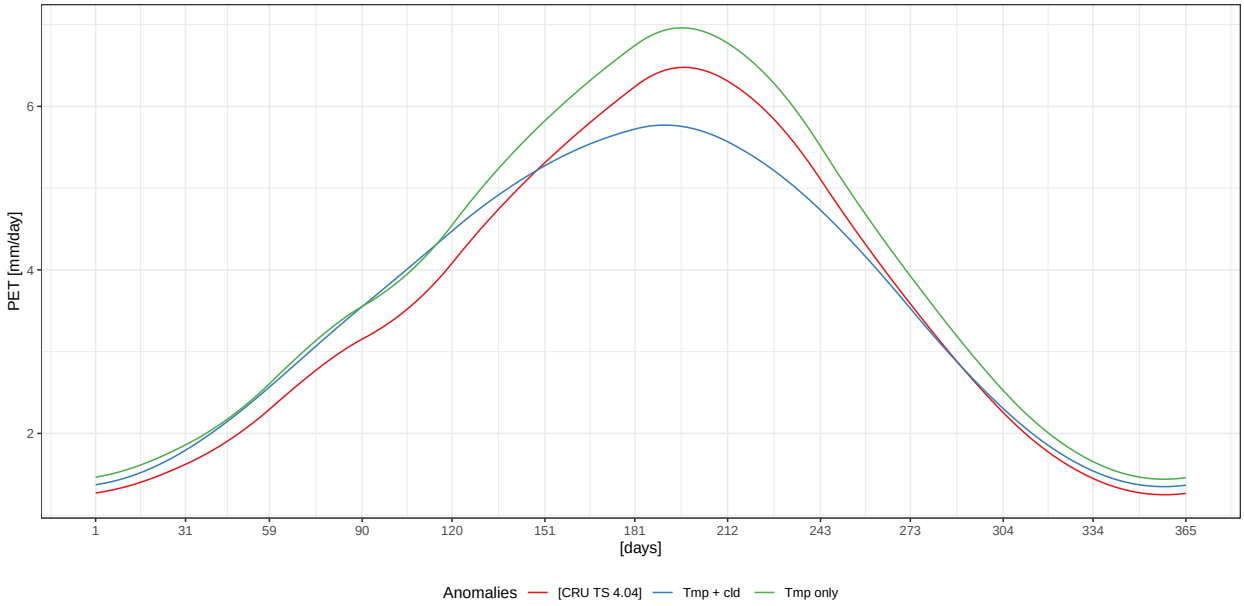
Padul: cloud coverage anomalies



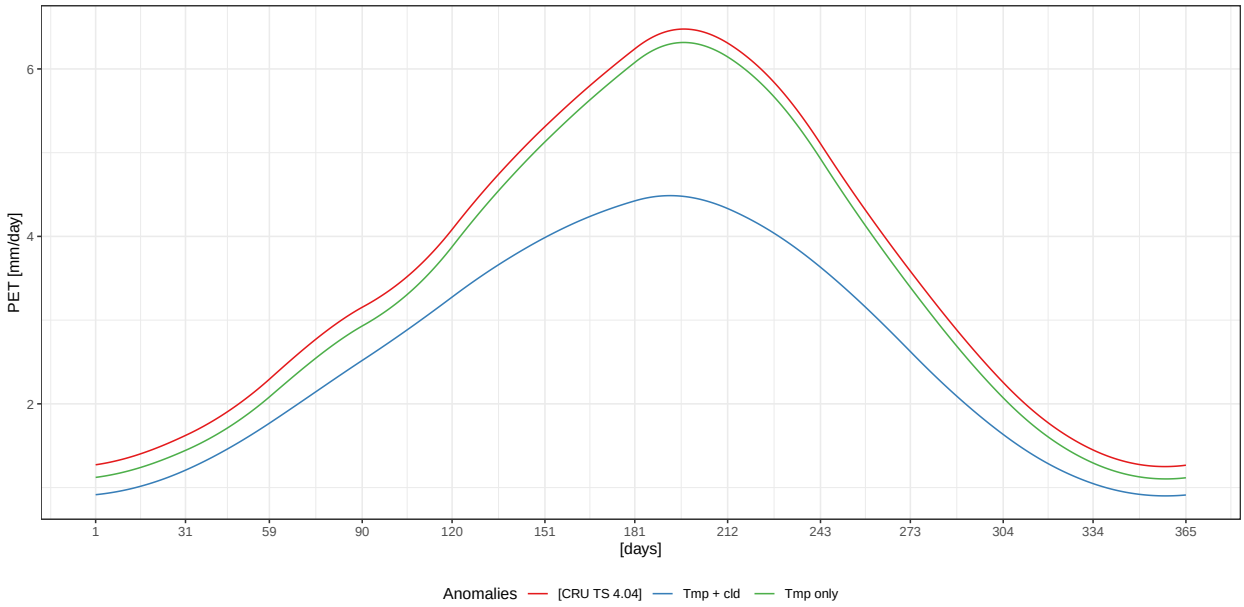
Re-calculate potential evapotranspiration (PET)

After including temperature and cloud coverage anomalies.

Padul: PET for age = 11044 cal yr BP



Padul: PET for age = 21048 cal yr BP

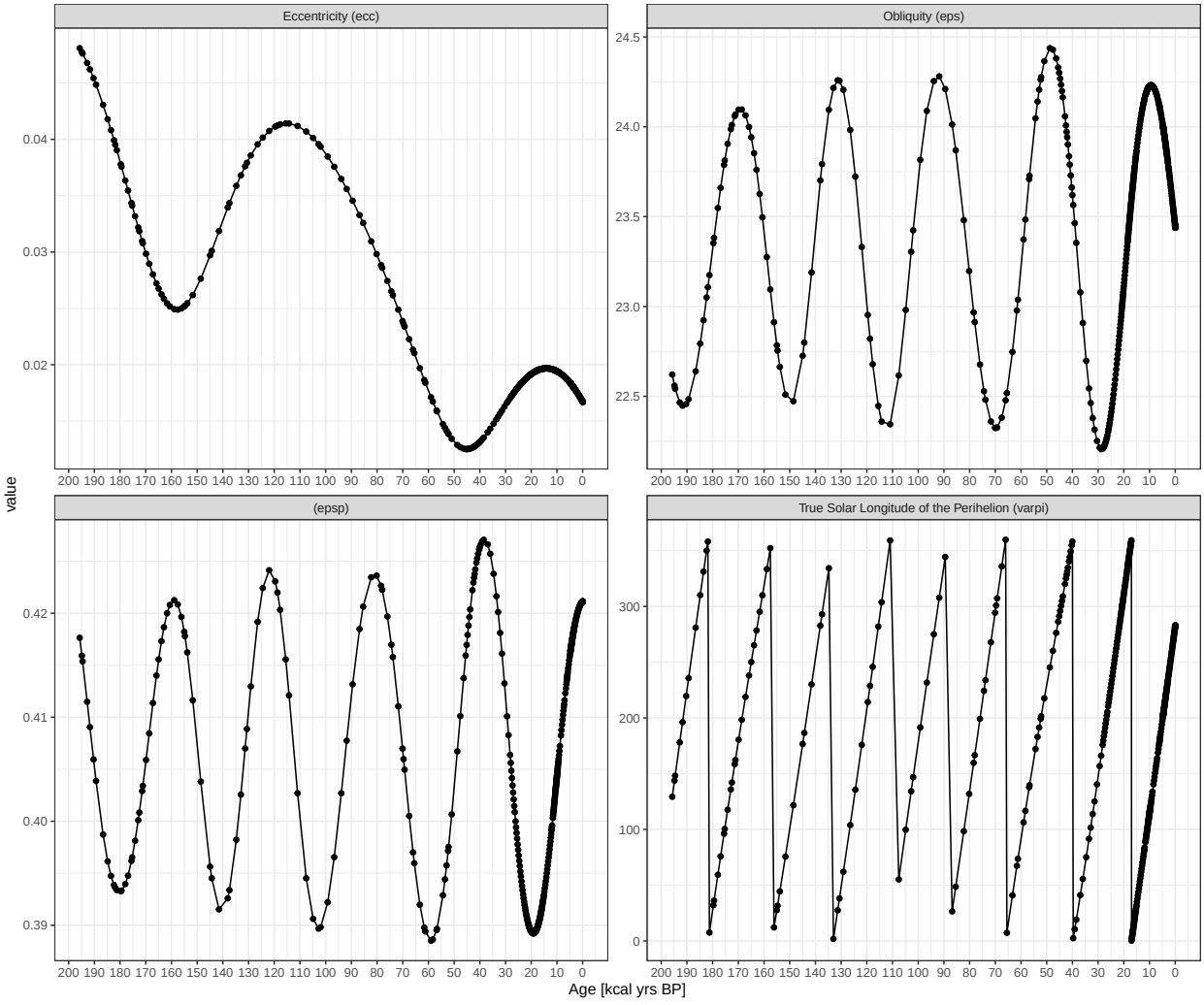


PET with orbital parameters

Find orbital parameters

Selected samples and their orbital parameters:

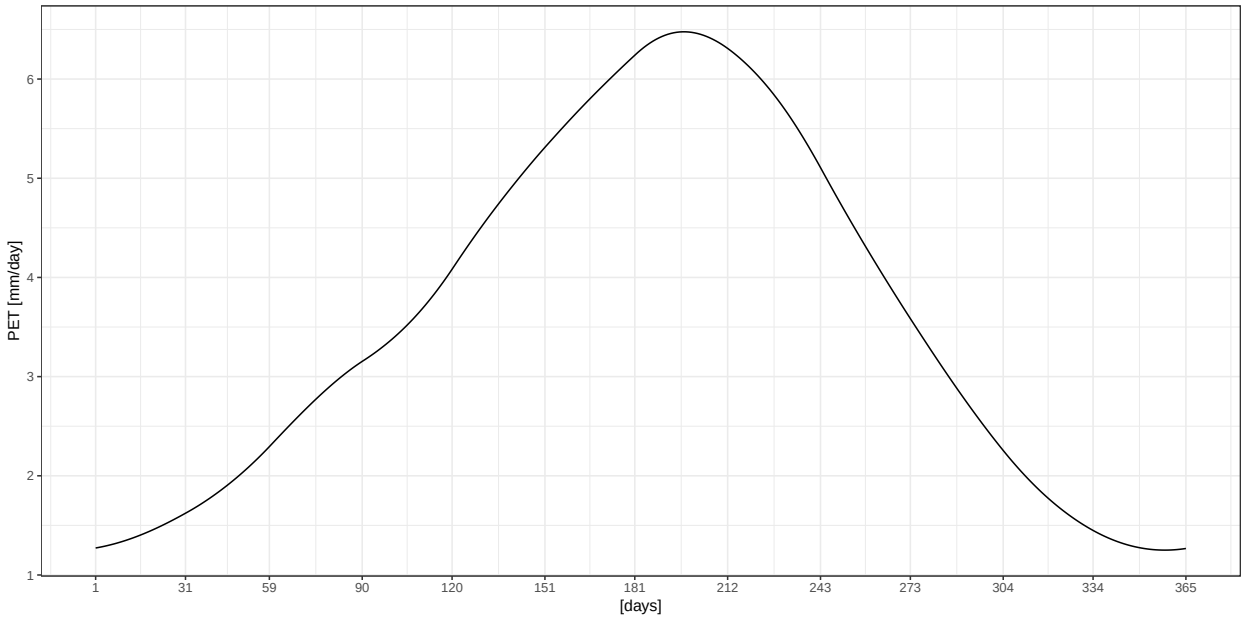
year	eps	ecc	varpi	epsp
-62	23.43821	0.0166988	283.10107	0.4211302
-56	23.43899	0.0167012	282.99828	0.4211293
-50	23.43977	0.0167037	282.89549	0.4211284
-43	23.44068	0.0167065	282.77558	0.4211273
6007	24.10588	0.0186835	180.75324	0.4138745
11044	24.19953	0.0195329	97.68662	0.4016794
21048	22.94125	0.0189846	293.63418	0.3900594
195710	22.62131	0.0480977	129.31171	0.4176410



Plots

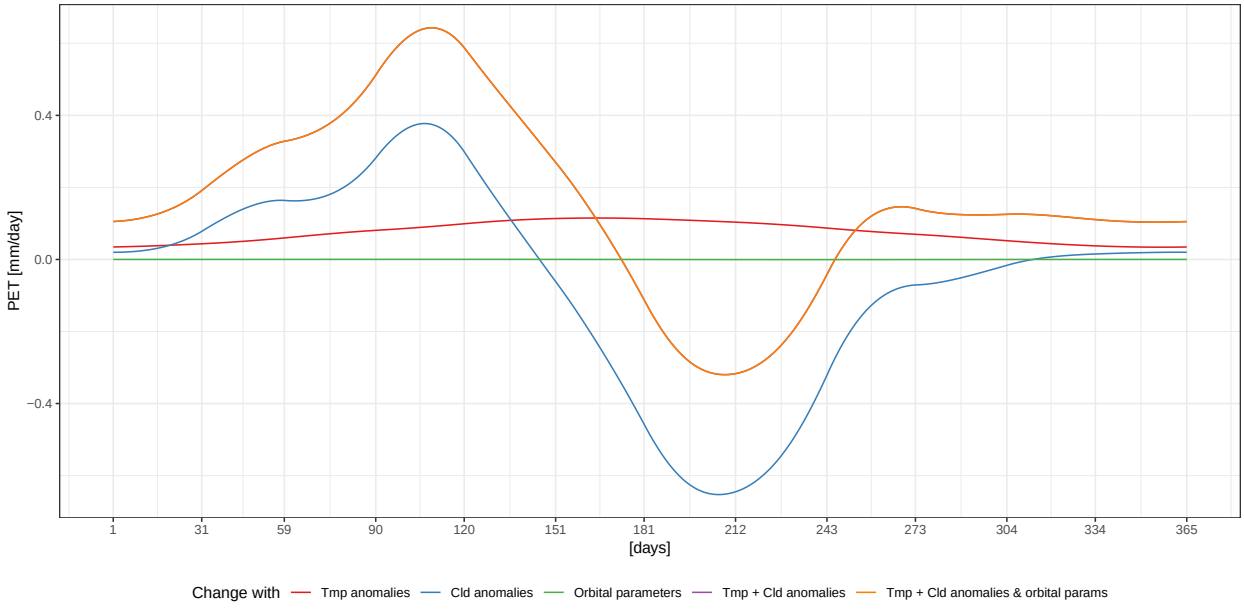
Modern PET

Obtained from CRU TS 4.04

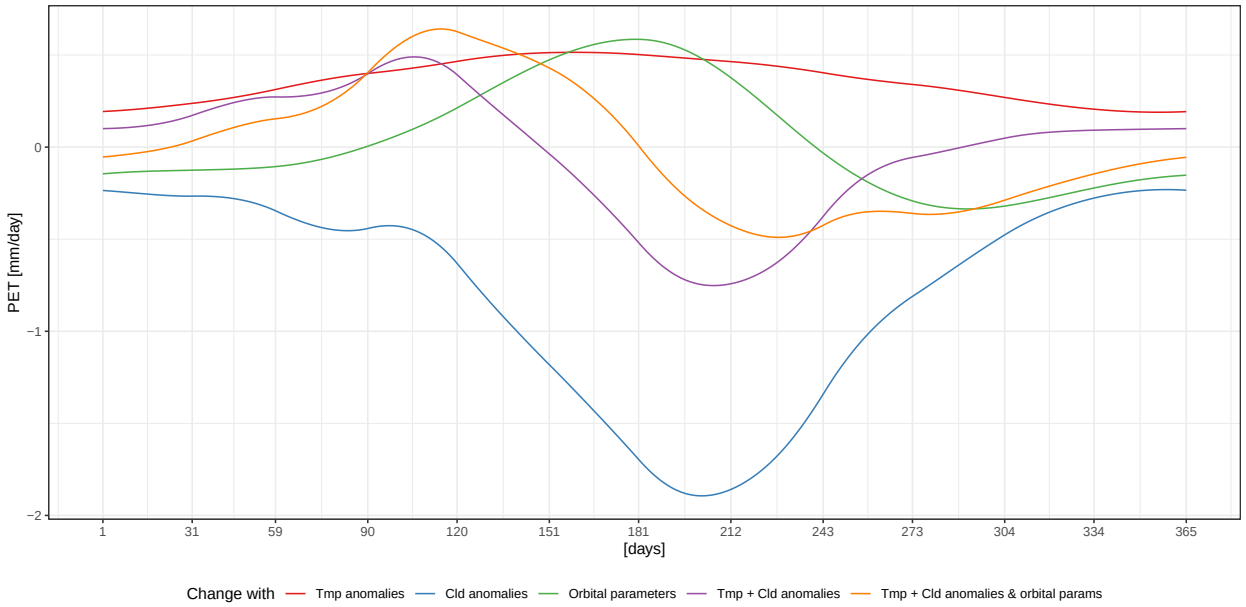


PET changes

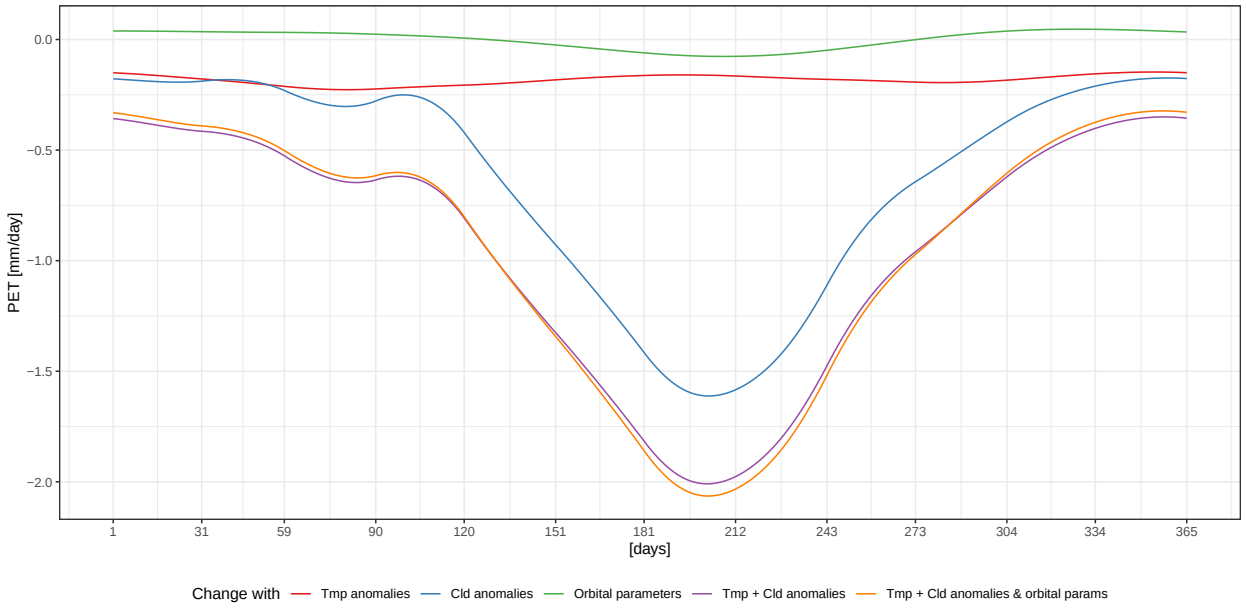
Padul: PET for age = -62 cal yr BP



Padul: PET for age = 11044 cal yr BP

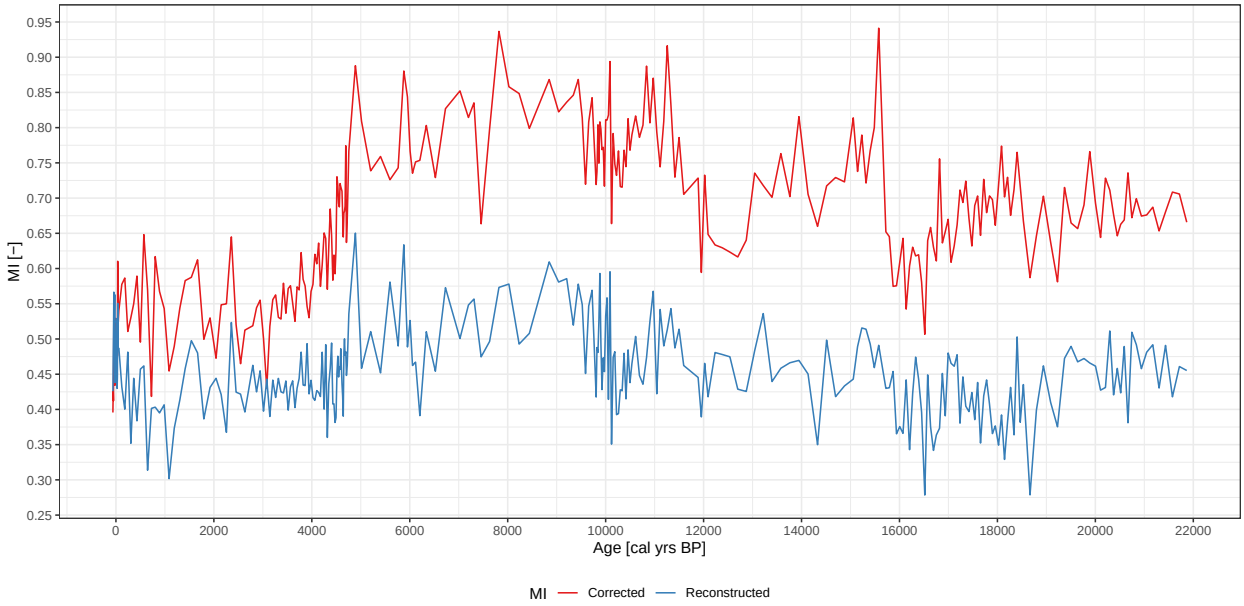


Padul: PET for age = 21048 cal yr BP

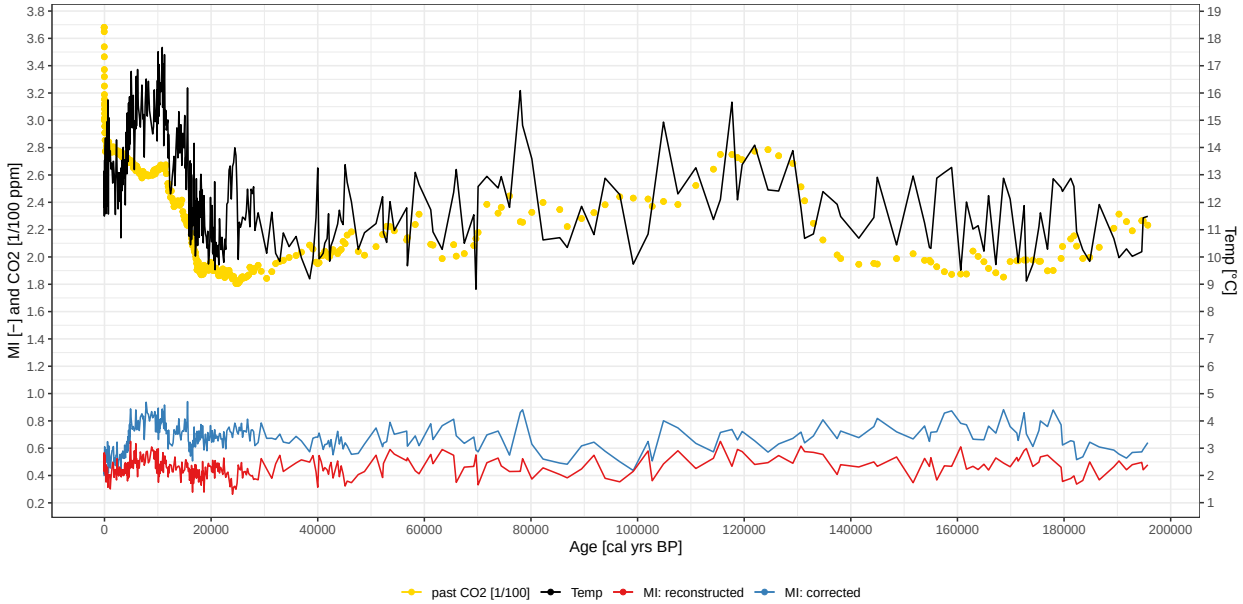


Reconstructed vs corrected `MI`

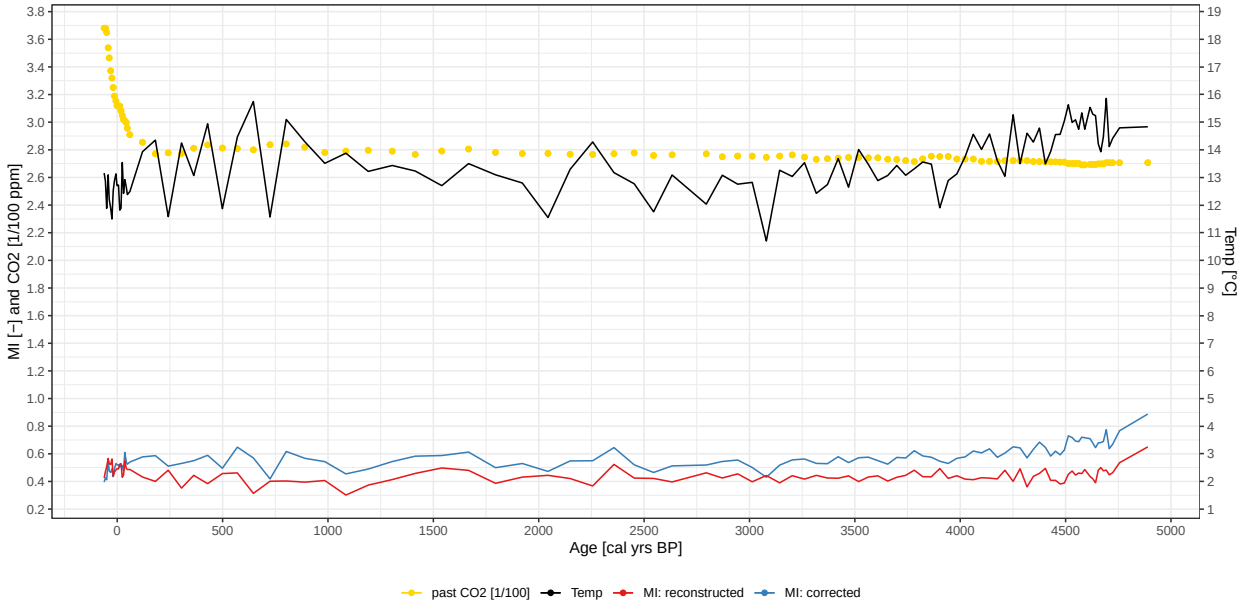
- `age < 22k`



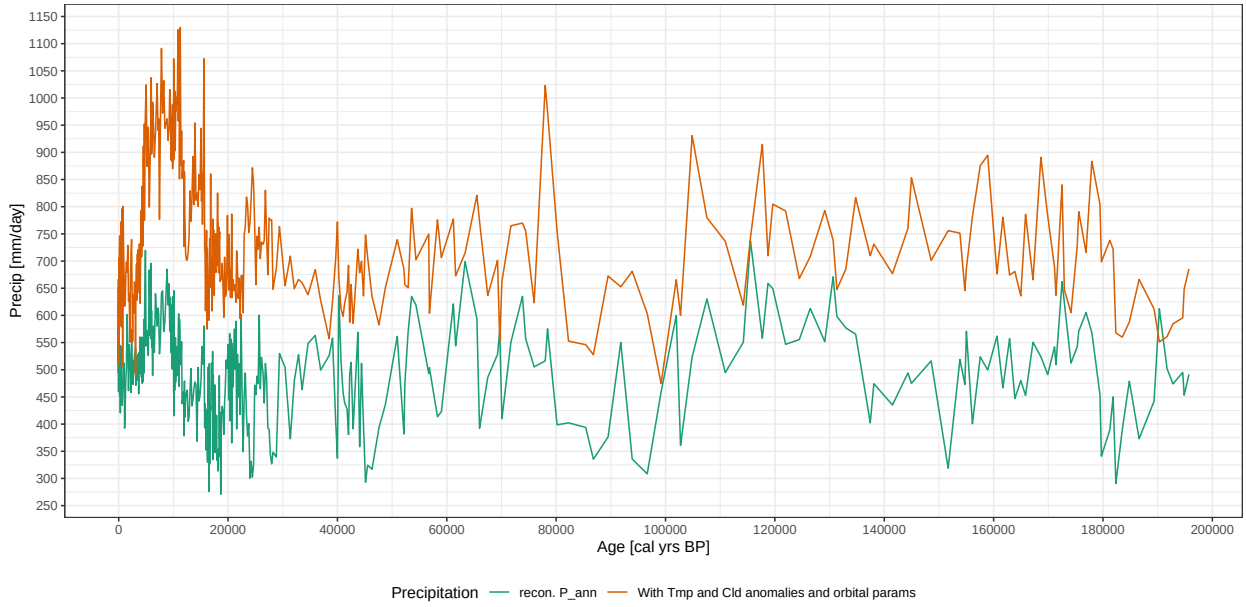
Include past CO2 and Temperature



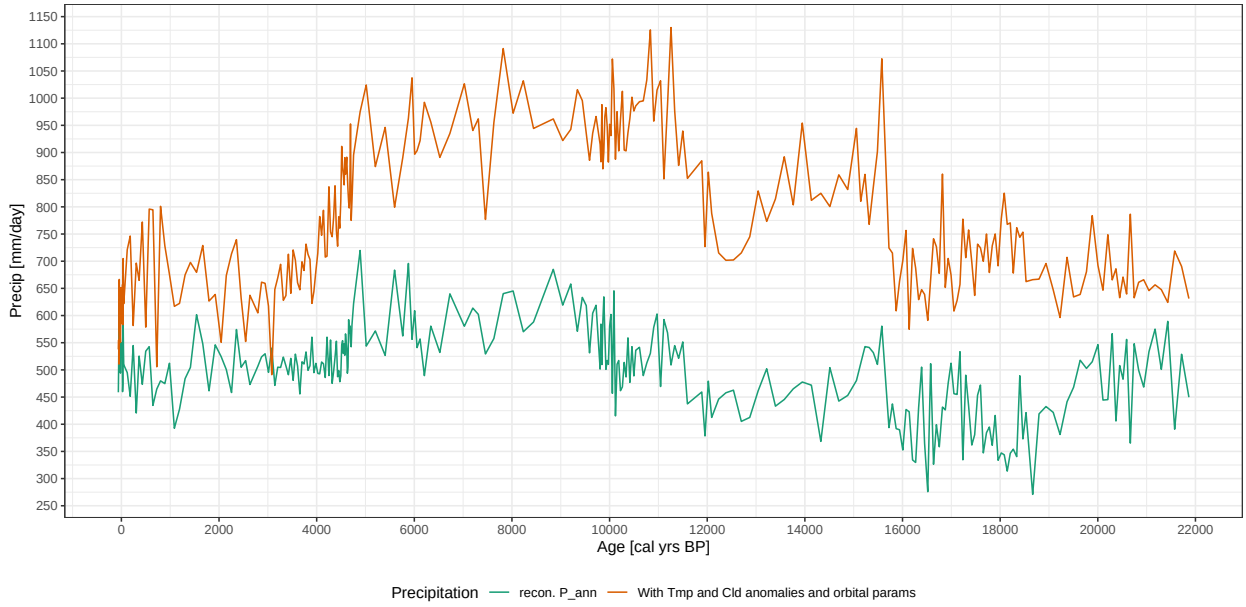
- `age < 5k`



Reconstructed vs corrected `P_ann`



`age < 22k`



References

[1] Bereiter, B., Eggleston, S., Schmitt, J., Nehrbass-Ahles, C., Stocker, T. F., Fischer, H., Kipfstuhl, S., and Chappellaz, J. (2015), Revision of the EPICA Dome C CO2 record from 800 to 600 kyr before present, Geophys. Res. Lett., 42, 542– 549, doi:10.1002/2014GL061957.

Appendix

A1. Laguna de Padul Data

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
-62	368.020	13.159180	311.765	12.19893	0.425809	458.807	0.3956459	537.7063
-56	368.020	12.862720	311.765	12.19893	0.471798	506.622	0.4259131	554.8702
-50	364.900	11.884725	311.765	12.19893	0.506921	570.575	0.4123184	510.6854
-43	353.835	13.093390	311.765	12.19893	0.566461	630.212	0.5520437	666.4417
-38	346.520	12.203865	311.765	12.19893	0.528049	553.384	0.4748576	574.5343
-31	337.155	11.879800	311.765	12.19893	0.522880	521.380	0.4653719	556.2423
-25	331.960	11.495670	311.765	12.19893	0.562884	576.799	0.4916622	564.2573
-19	325.080	12.525630	311.765	12.19893	0.438233	494.120	0.4343545	550.4916
-13	318.840	12.889695	311.765	12.19893	0.468382	539.325	0.4946022	614.7529
-6	315.340	13.130160	311.765	12.19893	0.483879	550.167	0.5293781	651.4703
-1	312.000	12.701260	311.765	12.19893	0.493117	550.058	0.5205401	628.6931
6	311.290	12.724970	311.765	12.19893	0.490124	523.334	0.5200635	629.2483
12	311.730	11.815300	311.765	12.19893	0.524648	546.752	0.5034225	585.0514
18	308.260	11.888230	311.765	12.19893	0.528909	540.303	0.5176301	597.3984
24	304.970	13.540305	311.765	12.19893	0.429877	459.993	0.5155983	657.1127
30	301.880	12.423860	311.765	12.19893	0.446556	473.391	0.4761679	583.2662
36	301.000	12.921615	311.765	12.19893	0.550525	588.974	0.6103004	704.8205
43	299.630	12.653010	311.765	12.19893	0.494339	536.164	0.5410442	643.6188
48	295.610	12.378860	311.765	12.19893	0.486138	510.951	0.5249477	621.8157
60	290.920	12.490615	311.765	12.19893	0.486739	507.129	0.5407672	637.2247
120	285.500	13.932820	311.765	12.19893	0.432149	495.012	0.5775966	721.1247
181	277.130	14.350570	311.765	12.19893	0.400314	451.370	0.5865232	746.2932
242	277.815	11.581430	311.765	12.19893	0.481347	544.763	0.5106606	581.6112
305	277.355	14.247445	311.765	12.19893	0.351935	420.679	0.5303972	696.4756
363	281.110	13.068665	311.765	12.19893	0.444194	525.400	0.5500897	664.7410
429	283.535	14.941955	311.765	12.19893	0.383781	473.388	0.5892722	772.0657
499	281.270	11.871105	311.765	12.19893	0.457146	534.389	0.4955822	578.6935

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
570	280.910	14.464090	311.765	12.19893	0.461804	542.729	0.6481275	795.9040
646	280.005	15.748480	311.765	12.19893	0.313710	434.647	0.5699274	794.5625
725	283.690	11.569615	311.765	12.19893	0.401503	464.740	0.4184683	505.6996
802	284.240	15.099470	311.765	12.19893	0.403256	479.842	0.6169471	800.9824
890	281.905	14.293475	311.765	12.19893	0.395018	474.693	0.5674938	728.4729
985	278.075	13.511010	311.765	12.19893	0.406559	512.210	0.5432225	675.5892
1085	279.020	13.877625	311.765	12.19893	0.301657	392.523	0.4545319	616.9599
1191	279.640	13.218835	311.765	12.19893	0.373369	427.789	0.4897073	622.3685
1305	279.020	13.432900	311.765	12.19893	0.413576	483.930	0.5439427	674.9024
1414	276.675	13.233040	311.765	12.19893	0.458016	504.619	0.5828721	697.7252
1540	279.130	12.702920	311.765	12.19893	0.497576	601.559	0.5875445	679.4756
1667	280.575	13.501385	311.765	12.19893	0.480201	548.109	0.6124158	728.9321
1795	278.070	13.096470	311.765	12.19893	0.386541	461.502	0.4995659	626.6064
1922	277.300	12.799950	311.765	12.19893	0.431293	546.130	0.5299059	638.8389
2044	277.450	11.551290	311.765	12.19893	0.444219	524.376	0.4726975	550.8013
2149	276.800	13.294700	311.765	12.19893	0.421076	500.618	0.5485297	673.5838
2256	276.700	14.283885	311.765	12.19893	0.367480	458.314	0.5498826	713.6620
2357	277.150	13.174110	311.765	12.19893	0.523369	574.283	0.6448917	739.6261
2453	277.750	12.771775	311.765	12.19893	0.424511	504.766	0.5205055	632.1826
2545	275.900	11.757505	311.765	12.19893	0.421738	517.122	0.4649451	552.2512
2633	276.400	13.088010	311.765	12.19893	0.396330	473.100	0.5125966	637.3616
2795	277.100	12.033940	311.765	12.19893	0.462588	506.653	0.5187764	604.8486
2871	275.000	13.081115	311.765	12.19893	0.424956	523.963	0.5442957	661.3872
2944	275.500	12.756910	311.765	12.19893	0.454794	529.700	0.5551048	659.3166
3013	275.450	12.822585	311.765	12.19893	0.397566	495.459	0.5010073	617.5488
3080	274.600	10.699305	311.765	12.19893	0.443022	540.029	0.4302155	491.1501
3143	275.450	13.261510	311.765	12.19893	0.390003	471.467	0.5179680	647.9630
3203	276.300	13.035830	311.765	12.19893	0.441610	504.997	0.5558203	669.4539
3261	274.700	13.535495	311.765	12.19893	0.416972	504.399	0.5625664	694.2460
3317	273.100	12.425060	311.765	12.19893	0.444067	523.535	0.5307175	627.9796
3370	273.550	12.743310	311.765	12.19893	0.424860	507.488	0.5282860	636.7842
3421	274.000	13.684420	311.765	12.19893	0.423377	491.095	0.5791262	712.8312
3470	274.500	12.647450	311.765	12.19893	0.440416	521.238	0.5365422	640.9601

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
3518	274.500	14.010410	311.765	12.19893	0.399001	480.794	0.5716121	720.6918
3564	274.200	13.475130	311.765	12.19893	0.432065	528.989	0.5756351	701.9962
3609	274.200	12.885270	311.765	12.19893	0.440593	507.170	0.5508163	660.4777
3656	273.200	13.071425	311.765	12.19893	0.402640	455.730	0.5250253	647.3954
3699	273.000	13.434470	311.765	12.19893	0.430108	514.959	0.5739821	698.9543
3741	272.250	13.080005	311.765	12.19893	0.444006	510.806	0.5696185	682.9192
3782	271.500	13.312910	311.765	12.19893	0.481336	533.065	0.6225849	731.4325
3822	273.450	13.559430	311.765	12.19893	0.434527	499.137	0.5846130	712.8250
3863	275.400	13.483015	311.765	12.19893	0.433829	507.650	0.5752451	703.1882
3903	275.150	11.902960	311.765	12.19893	0.493315	560.226	0.5463209	622.3726
3943	275.150	12.888460	311.765	12.19893	0.422033	494.918	0.5301313	644.2771
3984	273.300	13.129820	311.765	12.19893	0.441372	512.026	0.5674526	682.3058
4023	273.300	13.747505	311.765	12.19893	0.416761	493.542	0.5775117	714.5733
4062	273.300	14.563010	311.765	12.19893	0.412826	492.749	0.6201613	782.2309
4101	271.700	14.015225	311.765	12.19893	0.426782	514.529	0.6066944	747.6866
4139	271.650	14.572930	311.765	12.19893	0.424069	511.363	0.6361209	793.6332
4176	271.650	13.604615	311.765	12.19893	0.418275	485.980	0.5746142	707.5296
4212	272.200	13.041955	311.765	12.19893	0.481193	560.230	0.6053199	709.1557
4251	272.200	15.268020	311.765	12.19893	0.400423	489.580	0.6505422	836.8511
4284	272.150	13.499280	311.765	12.19893	0.491962	555.011	0.6426978	753.6854
4317	272.150	14.600530	311.765	12.19893	0.360241	475.196	0.5706022	745.0226
4347	271.500	14.278675	311.765	12.19893	0.436612	497.000	0.6324166	780.0891
4376	271.500	14.787685	311.765	12.19893	0.458481	522.957	0.6845338	838.7310
4404	271.300	13.491295	311.765	12.19893	0.494253	552.747	0.6464921	755.5270
4429	271.300	13.935795	311.765	12.19893	0.407680	487.470	0.5834525	727.6335
4452	271.300	14.553305	311.765	12.19893	0.407926	498.811	0.6191168	781.6598
4474	271.100	14.558790	311.765	12.19893	0.381470	478.200	0.5925605	760.8404
4494	271.100	15.045370	311.765	12.19893	0.388216	489.083	0.6275261	810.2473
4513	270.100	15.631435	311.765	12.19893	0.451673	546.480	0.7302369	911.2886
4531	270.100	14.992585	311.765	12.19893	0.475532	553.775	0.7174913	872.4842
4547	270.100	15.086240	311.765	12.19893	0.446055	530.079	0.6923543	858.0495
4562	270.100	14.741750	311.765	12.19893	0.460775	547.832	0.6874922	840.4288
4577	269.100	15.337330	311.765	12.19893	0.456752	526.962	0.7206007	890.5696

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
4591	269.100	14.744645	311.765	12.19893	0.486113	566.199	0.7162545	859.9469
4616	269.450	15.537315	311.765	12.19893	0.435921	538.293	0.7097794	891.4072
4629	269.450	15.289300	311.765	12.19893	0.418996	493.895	0.6775922	857.0689
4642	269.450	15.236480	311.765	12.19893	0.390457	504.977	0.6447874	829.9699
4655	269.800	14.217500	311.765	12.19893	0.481282	592.298	0.6787813	808.0733
4667	269.800	13.929305	311.765	12.19893	0.500180	567.951	0.6814089	797.8660
4679	269.800	14.456340	311.765	12.19893	0.477212	581.116	0.6885184	826.8267
4693	270.650	15.862295	311.765	12.19893	0.481918	551.825	0.7742774	952.5250
4707	270.650	14.117130	311.765	12.19893	0.448255	542.514	0.6370201	775.0822
4723	270.650	14.411470	311.765	12.19893	0.462332	582.651	0.6685739	810.2087
4756	270.650	14.795020	311.765	12.19893	0.535625	621.786	0.7668665	895.4839
4890	270.700	14.834370	311.765	12.19893	0.650277	719.723	0.8879217	974.8393
5015	268.950	16.790890	311.765	12.19893	0.458337	543.742	0.8090704	1024.2487
5202	269.800	14.724575	311.765	12.19893	0.510507	571.692	0.7386832	874.0859
5403	265.300	15.916575	311.765	12.19893	0.451895	526.641	0.7590681	946.1889
5596	267.600	13.197670	311.765	12.19893	0.580824	683.575	0.7260891	799.3372
5763	265.700	14.989795	311.765	12.19893	0.490060	562.447	0.7429619	890.2274
5879	263.100	14.690215	311.765	12.19893	0.633639	695.875	0.8803794	963.0636
5953	263.700	16.610490	311.765	12.19893	0.488720	556.177	0.8436306	1037.3850
6007	266.700	14.797680	311.765	12.19893	0.526236	608.909	0.7666967	896.8356
6056	266.100	15.365505	311.765	12.19893	0.462299	540.978	0.7353019	903.2715
6118	265.500	15.526410	311.765	12.19893	0.467143	556.938	0.7513678	921.7458
6206	264.350	16.861230	311.765	12.19893	0.391183	489.446	0.7535885	992.3633
6338	262.700	15.520625	311.765	12.19893	0.510261	580.536	0.8031038	956.0215
6523	261.150	15.196245	311.765	12.19893	0.454215	532.054	0.7291432	890.9770
6729	260.750	14.751830	311.765	12.19893	0.572781	639.995	0.8269062	935.0820
7025	257.850	16.292160	311.765	12.19893	0.500633	580.222	0.8521880	1026.4728
7198	262.650	15.048425	311.765	12.19893	0.548170	613.719	0.8144152	940.4938
7311	261.850	15.212085	311.765	12.19893	0.556734	602.210	0.8352080	961.9747
7457	259.550	13.652665	311.765	12.19893	0.474606	529.307	0.6635138	776.8224
7630	260.100	15.563800	311.765	12.19893	0.496452	557.763	0.7978644	955.2239
7821	260.050	16.512985	311.765	12.19893	0.573211	640.292	0.9366492	1091.2874
8024	260.200	15.154520	311.765	12.19893	0.577937	645.181	0.8580223	972.2923

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
8233	259.300	16.430325	311.765	12.19893	0.492751	570.199	0.8484176	1031.9910
8442	259.800	15.368730	311.765	12.19893	0.507928	588.088	0.7989229	944.2798
8847	259.950	14.772840	311.765	12.19893	0.609482	685.032	0.8682840	961.7672
9040	259.850	14.501085	311.765	12.19893	0.580817	619.129	0.8223966	921.9751
9205	262.850	14.772915	311.765	12.19893	0.585610	658.053	0.8362206	942.5521
9340	263.750	16.114460	311.765	12.19893	0.519646	571.017	0.8461068	1015.5660
9441	262.900	15.439775	311.765	12.19893	0.577847	633.429	0.8683870	995.6013
9522	260.750	14.951680	311.765	12.19893	0.548766	618.322	0.8139998	935.2895
9589	263.800	15.205050	311.765	12.19893	0.450967	531.376	0.7196610	885.6414
9654	263.800	15.017930	311.765	12.19893	0.546659	604.397	0.8081473	935.5060
9723	263.800	15.199465	311.765	12.19893	0.569147	618.917	0.8424872	966.2357
9806	264.400	15.815015	311.765	12.19893	0.417580	501.482	0.7192625	914.8753
9823	264.400	14.884225	311.765	12.19893	0.487888	584.275	0.7376344	882.9062
9843	264.400	16.120400	311.765	12.19893	0.480904	509.798	0.8040195	987.9877
9862	264.400	14.437820	311.765	12.19893	0.524941	589.289	0.7495777	869.9131
9882	264.400	14.242735	311.765	12.19893	0.593003	634.317	0.8081808	901.4564
9903	264.300	15.793380	311.765	12.19893	0.493796	566.960	0.7981952	966.5167
9925	264.300	16.457260	311.765	12.19893	0.428127	500.996	0.7687620	982.5031
9951	264.300	15.717115	311.765	12.19893	0.473277	517.314	0.7721160	947.4175
9975	264.300	15.131305	311.765	12.19893	0.453730	510.286	0.7169564	882.4006
10001	264.200	15.323460	311.765	12.19893	0.532910	580.889	0.8111712	951.9550
10028	264.100	14.871245	311.765	12.19893	0.558392	602.007	0.8107949	931.0299
10057	264.100	17.511240	311.765	12.19893	0.414236	456.864	0.8178275	1072.0805
10089	264.100	15.605590	311.765	12.19893	0.595404	645.410	0.8938241	1017.2308
10120	264.000	16.048725	311.765	12.19893	0.350761	415.402	0.6637811	887.6351
10153	263.700	16.008700	311.765	12.19893	0.473838	510.359	0.7916482	975.1336
10187	263.700	15.144115	311.765	12.19893	0.481948	517.289	0.7485794	902.8795
10222	264.550	16.486195	311.765	12.19893	0.392532	461.765	0.7322160	959.6522
10262	264.550	17.041910	311.765	12.19893	0.394061	468.638	0.7669211	1012.6108
10299	265.700	15.637060	311.765	12.19893	0.427851	513.740	0.7163079	904.4051
10337	265.300	15.631225	311.765	12.19893	0.426451	487.014	0.7154837	902.9945
10376	264.900	15.559980	311.765	12.19893	0.479709	558.879	0.7679910	936.3172
10415	266.200	16.365245	311.765	12.19893	0.414970	477.052	0.7446062	962.3849

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
10458	266.200	16.276965	311.765	12.19893	0.484494	542.725	0.8126909	1001.7657
10497	266.200	16.349345	311.765	12.19893	0.438019	488.915	0.7679906	976.3182
10536	267.200	16.278340	311.765	12.19893	0.464915	536.169	0.7896357	985.7714
10612	267.200	16.047825	311.765	12.19893	0.503634	541.574	0.8165843	993.5279
10690	266.450	16.485350	311.765	12.19893	0.448163	489.473	0.7862057	994.9442
10762	266.000	16.975485	311.765	12.19893	0.435743	512.632	0.8035776	1033.4667
10835	265.550	17.668380	311.765	12.19893	0.473725	530.433	0.8873252	1125.5968
10904	266.350	15.477845	311.765	12.19893	0.524962	578.197	0.8068187	957.7365
10972	266.200	15.780770	311.765	12.19893	0.567718	602.877	0.8702265	1014.9957
11044	266.200	17.062450	311.765	12.19893	0.422194	469.446	0.7938832	1032.0170
11113	264.800	14.071460	311.765	12.19893	0.541849	592.654	0.7443512	851.3957
11187	265.150	16.074465	311.765	12.19893	0.490152	568.284	0.8091083	988.3038
11258	264.400	17.405490	311.765	12.19893	0.513015	509.061	0.9162330	1129.9232
11333	264.455	15.502385	311.765	12.19893	0.543125	544.682	0.8319742	976.7916
11414	266.320	14.840655	311.765	12.19893	0.487248	521.303	0.7297250	876.2629
11499	267.415	15.364930	311.765	12.19893	0.513904	551.458	0.7859144	939.5335
11594	261.000	14.643270	311.765	12.19893	0.462316	437.416	0.7052983	852.3311
11888	253.730	15.016305	311.765	12.19893	0.445394	459.323	0.7284537	884.7856
11954	251.455	13.614930	311.765	12.19893	0.389403	378.477	0.5944572	726.8460
12022	248.130	14.482675	311.765	12.19893	0.465376	479.259	0.7325416	863.8399
12091	253.345	14.124780	311.765	12.19893	0.417931	412.517	0.6484974	787.9734
12234	249.090	12.575605	311.765	12.19893	0.480760	446.255	0.6335147	715.2229
12382	243.655	12.307820	311.765	12.19893	0.477946	457.859	0.6294482	701.6887
12537	248.330	12.471630	311.765	12.19893	0.474711	462.718	0.6233192	702.2365
12698	242.915	12.908245	311.765	12.19893	0.428726	405.223	0.6164339	715.2668
12871	240.295	13.249050	311.765	12.19893	0.425493	412.525	0.6402935	744.9096
13043	236.770	13.682535	311.765	12.19893	0.483385	461.539	0.7355086	829.2438
13218	239.410	12.610745	311.765	12.19893	0.536082	502.167	0.7179056	773.2758
13397	237.830	13.914370	311.765	12.19893	0.439547	433.267	0.7010603	814.5464
13578	239.845	14.723270	311.765	12.19893	0.458435	445.499	0.7631675	892.1229
13762	241.110	13.627845	311.765	12.19893	0.466207	465.128	0.7020897	803.6824
13947	238.245	15.317390	311.765	12.19893	0.469603	477.717	0.8156030	954.1823
14133	237.820	13.802605	311.765	12.19893	0.450253	471.934	0.7054823	812.0068

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
14327	238.940	14.841775	311.765	12.19893	0.349928	368.451	0.6598285	825.0018
14512	241.600	13.351390	311.765	12.19893	0.498382	504.147	0.7173108	800.5425
14695	233.200	14.525705	311.765	12.19893	0.418140	442.566	0.7292408	859.0081
14877	230.035	13.996235	311.765	12.19893	0.433336	452.959	0.7229761	831.8100
15056	227.185	15.177935	311.765	12.19893	0.443005	480.311	0.8138801	944.3887
15144	229.240	13.245490	311.765	12.19893	0.489104	511.906	0.7378085	810.1894
15231	229.225	13.647995	311.765	12.19893	0.515634	542.840	0.7894558	859.7656
15317	227.640	12.467560	311.765	12.19893	0.513872	541.264	0.7213872	767.7855
15402	225.065	13.452520	311.765	12.19893	0.492902	531.799	0.7673355	836.4554
15486	223.400	14.472345	311.765	12.19893	0.459350	510.082	0.8001760	902.0070
15576	223.145	16.186575	311.765	12.19893	0.491031	580.480	0.9411668	1072.3975
15722	223.510	12.524460	311.765	12.19893	0.429873	393.798	0.6521483	724.3893
15793	223.610	12.398135	311.765	12.19893	0.430739	437.342	0.6452423	715.0045
15870	222.935	10.760215	311.765	12.19893	0.453890	391.868	0.5747100	608.6801
15939	223.770	12.350730	311.765	12.19893	0.365376	389.876	0.5754866	663.0863
16006	223.400	12.724970	311.765	12.19893	0.375637	352.619	0.6090029	701.1382
16072	224.360	13.518925	311.765	12.19893	0.366020	427.142	0.6429085	756.5925
16137	223.635	10.445880	311.765	12.19893	0.441893	422.917	0.5424303	574.7433
16206	227.320	13.415415	311.765	12.19893	0.342865	334.289	0.6036343	723.4689
16269	216.390	11.893750	311.765	12.19893	0.422392	329.700	0.6302876	687.2175
16330	213.515	10.638686	311.765	12.19893	0.474221	430.516	0.6179157	629.2797
16391	210.360	11.017990	311.765	12.19893	0.442874	505.088	0.6195094	647.6909
16452	217.190	11.550620	311.765	12.19893	0.395824	364.729	0.5806313	638.8627
16517	208.300	11.802705	311.765	12.19893	0.278469	275.894	0.5066578	591.0911
16576	208.555	11.148750	311.765	12.19893	0.448982	511.359	0.6396390	666.3381
16635	210.805	12.849935	311.765	12.19893	0.375400	326.366	0.6583659	741.3175
16694	211.700	13.012700	311.765	12.19893	0.341791	399.207	0.6304158	726.6981
16753	207.890	12.077215	311.765	12.19893	0.363719	358.527	0.6107863	677.4881
16818	205.360	14.158905	311.765	12.19893	0.373298	431.598	0.7556711	860.3023
16876	204.060	10.790900	311.765	12.19893	0.451034	426.281	0.6363904	651.7101
16935	203.625	12.048430	311.765	12.19893	0.390956	475.464	0.6523077	705.0809
16994	203.625	10.837725	311.765	12.19893	0.480079	512.285	0.6699129	674.7198
17053	203.210	10.031810	311.765	12.19893	0.465448	456.129	0.6088614	608.2139

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
17118	200.365	10.322564	311.765	12.19893	0.461283	454.817	0.6322878	627.8742
17177	198.460	10.426055	311.765	12.19893	0.477632	533.480	0.6619266	657.2063
17236	198.290	12.864705	311.765	12.19893	0.380516	334.530	0.7114504	777.3751
17295	195.265	11.274705	311.765	12.19893	0.446154	490.222	0.6937318	706.5139
17354	190.500	12.146745	311.765	12.19893	0.404584	433.440	0.7240685	757.4738
17419	191.325	11.463015	311.765	12.19893	0.396909	361.746	0.6711294	698.3510
17478	192.240	10.420725	311.765	12.19893	0.424005	380.578	0.6320175	636.9903
17537	192.495	12.035565	311.765	12.19893	0.385468	453.404	0.6894269	731.3816
17596	196.375	11.631775	311.765	12.19893	0.438248	472.099	0.7029959	724.5466
17655	193.795	11.983090	311.765	12.19893	0.352284	347.269	0.6470703	699.7949
17720	189.965	11.907815	311.765	12.19893	0.419211	384.481	0.7266031	750.0233
17779	189.475	10.722560	311.765	12.19893	0.441874	394.862	0.6793512	679.1959
17838	190.365	11.743250	311.765	12.19893	0.407721	361.216	0.7031376	728.4113
17898	190.990	12.404180	311.765	12.19893	0.365678	416.151	0.6979106	750.1540
17957	188.600	11.455935	311.765	12.19893	0.376603	333.602	0.6614236	691.4630
18023	187.790	12.783990	311.765	12.19893	0.349292	347.164	0.7180920	778.0591
18084	188.615	13.026125	311.765	12.19893	0.392178	343.753	0.7737883	825.1226
18145	186.945	12.796495	311.765	12.19893	0.328991	313.702	0.7016245	767.8187
18207	187.265	12.380540	311.765	12.19893	0.382299	346.585	0.7294833	770.5060
18269	188.775	10.786970	311.765	12.19893	0.431274	354.127	0.6754754	678.1342
18339	187.925	12.451600	311.765	12.19893	0.363905	340.379	0.7120902	761.6760
18402	188.340	11.038440	311.765	12.19893	0.502894	489.202	0.7649507	743.9045
18466	187.270	12.180700	311.765	12.19893	0.381802	373.039	0.7166451	753.4903
18530	187.670	10.514090	311.765	12.19893	0.435265	421.337	0.6675806	662.4453
18666	193.900	12.243875	311.765	12.19893	0.278691	270.932	0.5870900	666.0220
18796	192.970	11.128360	311.765	12.19893	0.398897	419.041	0.6462696	666.9930
18939	190.605	10.852120	311.765	12.19893	0.461861	432.595	0.7027005	695.8268
19087	191.900	10.722190	311.765	12.19893	0.409936	421.830	0.6373097	647.1994
19227	191.335	10.324510	311.765	12.19893	0.375349	381.124	0.5811469	596.3692
19370	191.550	10.942980	311.765	12.19893	0.472478	441.345	0.7150749	707.0966
19504	190.235	9.740445	311.765	12.19893	0.489560	468.040	0.6646997	634.2849
19639	191.420	10.050925	311.765	12.19893	0.467545	517.832	0.6566736	638.8355
19768	193.600	10.674020	311.765	12.19893	0.472280	502.737	0.6903005	680.6787

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
19886	196.060	12.180290	311.765	12.19893	0.465912	515.012	0.7659759	783.8363
20003	194.890	10.977170	311.765	12.19893	0.461431	546.495	0.6926202	692.2986
20106	192.095	10.556615	311.765	12.19893	0.427358	444.486	0.6441034	646.6449
20206	192.095	11.882545	311.765	12.19893	0.431126	445.307	0.7283204	748.6260
20295	190.230	10.149094	311.765	12.19893	0.511353	566.619	0.7111711	665.6133
20372	190.230	11.081285	311.765	12.19893	0.420676	405.942	0.6765852	686.0475
20448	191.960	10.071010	311.765	12.19893	0.458223	507.955	0.6464197	632.8241
20517	191.960	10.921845	311.765	12.19893	0.423512	482.851	0.6627483	670.8426
20590	190.845	9.857285	311.765	12.19893	0.489315	556.048	0.6690399	639.6014
20666	190.845	12.753365	311.765	12.19893	0.381058	365.329	0.7357758	786.4695
20745	190.210	9.532400	311.765	12.19893	0.509561	548.100	0.6721583	632.6644
20837	191.765	10.375157	311.765	12.19893	0.491845	499.282	0.6991640	661.1963
20940	191.765	10.531110	311.765	12.19893	0.457853	468.372	0.6745073	665.9100
21048	189.635	10.026748	311.765	12.19893	0.481180	533.501	0.6760280	645.9000
21173	189.225	10.006380	311.765	12.19893	0.491841	575.010	0.6871136	656.5322
21301	188.645	10.426695	311.765	12.19893	0.430404	500.945	0.6533752	647.7458
21433	186.235	9.707980	311.765	12.19893	0.490850	589.305	0.6804172	624.1425
21574	186.595	11.400080	311.765	12.19893	0.417916	390.909	0.7085158	718.7980
21716	186.595	10.645230	311.765	12.19893	0.460863	528.718	0.7058167	690.4157
21866	189.370	10.268613	311.765	12.19893	0.455234	449.707	0.6657582	631.2475
22031	189.080	10.720585	311.765	12.19893	0.430449	511.119	0.6693615	668.6115
22197	191.270	10.128333	311.765	12.19893	0.408191	417.690	0.6026146	594.4445
22379	187.020	9.802635	311.765	12.19893	0.528548	601.931	0.7204544	672.7022
22560	184.945	10.650660	311.765	12.19893	0.425217	462.798	0.6773004	673.6543
22748	190.010	10.275895	311.765	12.19893	0.386687	349.441	0.5949441	604.9493
22952	189.400	11.933450	311.765	12.19893	0.415948	453.426	0.7272348	749.5442
23152	189.340	12.001330	311.765	12.19893	0.425240	494.021	0.7411559	762.7120
23368	190.155	13.181340	311.765	12.19893	0.371450	416.189	0.7552855	817.8881
23577	187.385	13.330280	311.765	12.19893	0.317124	378.041	0.7203158	802.1274
23788	185.560	12.119755	311.765	12.19893	0.377940	400.802	0.7164245	752.4593
24012	183.905	13.303990	311.765	12.19893	0.263031	300.380	0.6781963	771.3987
24226	185.705	13.457145	311.765	12.19893	0.315264	331.476	0.7337868	816.6735
24450	183.650	13.995055	311.765	12.19893	0.321666	302.325	0.7836257	871.5938

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
24662	180.570	13.712425	311.765	12.19893	0.299384	324.909	0.7571296	842.9654
24871	180.630	12.357000	311.765	12.19893	0.344610	471.414	0.7191849	762.7389
25088	180.690	9.909560	311.765	12.19893	0.477244	454.037	0.7029477	656.7818
25291	181.675	11.272245	311.765	12.19893	0.449034	488.165	0.7539408	745.7155
25501	183.020	11.086455	311.765	12.19893	0.440271	474.360	0.7275594	721.9489
25699	184.960	11.214125	311.765	12.19893	0.495095	600.450	0.7824632	762.3151
25896	185.530	11.459530	311.765	12.19893	0.381754	465.063	0.6800090	704.2760
26104	184.545	11.427615	311.765	12.19893	0.426935	522.721	0.7282888	734.9460
26412	184.890	11.348065	311.765	12.19893	0.429776	491.632	0.7247682	730.7164
26614	185.475	11.676505	311.765	12.19893	0.405258	438.862	0.7174517	737.8025
26829	185.935	12.480595	311.765	12.19893	0.451586	511.634	0.8127891	830.3952
27049	186.830	11.751265	311.765	12.19893	0.415035	483.906	0.7261162	745.9876
27274	192.495	11.103970	311.765	12.19893	0.404285	393.360	0.6521570	674.7185
27506	191.380	12.480025	311.765	12.19893	0.396843	390.264	0.7329115	779.2373
27733	189.300	12.317240	311.765	12.19893	0.400278	344.294	0.7352377	775.2099
27974	189.290	12.569895	311.765	12.19893	0.371344	326.773	0.7211204	775.8408
28219	191.705	10.972120	311.765	12.19893	0.375762	348.138	0.6186364	648.0751
28821	193.890	11.616680	311.765	12.19893	0.368870	339.534	0.6415129	686.6072
29398	189.520	11.096930	311.765	12.19893	0.524119	529.944	0.7850615	763.4235
30419	184.300	10.134460	311.765	12.19893	0.448462	504.459	0.6720966	654.5426
31388	189.215	11.638685	311.765	12.19893	0.379583	373.005	0.6729482	708.9702
32106	195.165	10.132605	311.765	12.19893	0.484969	479.279	0.6642497	649.0975
32889	196.700	9.834265	311.765	12.19893	0.548047	527.799	0.7032486	666.1380
33545	197.465	10.880855	311.765	12.19893	0.429742	463.725	0.6448904	660.0158
34631	199.590	10.377045	311.765	12.19893	0.458898	548.505	0.6360226	638.0984
35945	201.045	10.751385	311.765	12.19893	0.492588	563.086	0.6867686	684.2173
36937	203.510	9.970725	311.765	12.19893	0.514820	499.423	0.6532678	627.2771
38485	208.655	9.198735	311.765	12.19893	0.498090	526.122	0.5733865	557.2864
39103	205.800	9.922572	311.765	12.19893	0.546192	558.244	0.6734551	625.7293
39681	196.185	11.449825	311.765	12.19893	0.427039	405.478	0.6813514	704.2151
40002	195.075	13.257680	311.765	12.19893	0.314463	337.094	0.6802275	771.9992
40253	195.795	9.932895	311.765	12.19893	0.546388	636.279	0.7110201	670.5979
40657	200.975	10.024009	311.765	12.19893	0.500606	516.663	0.6514764	612.1557

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
41029	201.250	10.137130	311.765	12.19893	0.433944	458.397	0.5907812	598.3621
41327	204.190	10.504615	311.765	12.19893	0.458241	438.943	0.6261429	622.4741
41758	201.120	10.671990	311.765	12.19893	0.441728	427.536	0.6307134	643.4305
42029	199.890	11.580640	311.765	12.19893	0.409008	380.907	0.6566300	692.1048
42240	200.395	9.844681	311.765	12.19893	0.467121	491.209	0.6096486	587.3010
42495	202.865	10.413640	311.765	12.19893	0.495868	513.575	0.6631213	656.6920
42877	205.305	10.613855	311.765	12.19893	0.381419	391.338	0.5517391	585.2624
43740	202.435	11.207270	311.765	12.19893	0.507078	569.130	0.7237158	721.7805
44062	204.310	11.711450	311.765	12.19893	0.391607	358.297	0.6303178	678.4575
44404	205.525	11.324645	311.765	12.19893	0.471039	511.717	0.6831282	699.5476
44764	211.365	11.184635	311.765	12.19893	0.411543	397.963	0.5944022	635.8535
45138	209.720	13.376115	311.765	12.19893	0.323035	292.999	0.6398266	748.0960
45525	216.005	12.733005	311.765	12.19893	0.359366	324.506	0.6170196	706.4371
46322	218.350	12.018120	311.765	12.19893	0.347459	316.961	0.5552058	635.0742
47601	204.025	10.271700	311.765	12.19893	0.407037	393.349	0.5618697	582.7306
48772	201.280	10.887380	311.765	12.19893	0.429229	436.214	0.6303903	651.2165
50937	207.525	11.221780	311.765	12.19893	0.548830	561.425	0.7481943	739.2342
52168	216.450	12.206855	311.765	12.19893	0.385159	381.794	0.6107805	684.8362
52330	216.450	10.884445	311.765	12.19893	0.488210	474.477	0.6367662	656.6726
52933	222.435	10.531495	311.765	12.19893	0.539465	569.688	0.6482017	650.6772
53562	222.200	12.023970	311.765	12.19893	0.590746	634.833	0.7897442	796.8995
54360	219.165	10.969175	311.765	12.19893	0.556933	619.046	0.7018703	702.4378
56695	212.440	11.799285	311.765	12.19893	0.508502	493.344	0.7252090	749.4893
56821	214.070	9.676870	311.765	12.19893	0.529626	503.786	0.6146072	603.8115
58294	223.750	13.096980	311.765	12.19893	0.434754	413.603	0.6904150	775.8676
59004	231.290	12.654425	311.765	12.19893	0.412567	422.669	0.6183015	706.4522
61201	209.260	11.728895	311.765	12.19893	0.554980	621.129	0.7791204	777.2090
61618	208.640	10.919690	311.765	12.19893	0.486621	544.000	0.6635409	672.8519
63345	198.775	10.277420	311.765	12.19893	0.590586	698.788	0.7646786	714.7966
65500	208.980	12.364315	311.765	12.19893	0.548204	593.851	0.8122000	820.9933
65984	200.590	13.201235	311.765	12.19893	0.349848	392.238	0.6912591	773.5086
67492	202.450	10.500190	311.765	12.19893	0.461421	485.944	0.6353440	636.5965
69280	208.340	11.543625	311.765	12.19893	0.466809	528.360	0.6819389	701.3413

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
69681	213.405	8.818884	311.765	12.19893	0.550936	571.279	0.5875051	552.7368
70083	217.940	12.575910	311.765	12.19893	0.331883	410.143	0.5732468	662.7877
71728	238.510	12.949905	311.765	12.19893	0.493640	551.165	0.6973583	764.8975
73834	232.035	12.521990	311.765	12.19893	0.527963	635.048	0.7256863	769.9352
74427	236.285	12.942090	311.765	12.19893	0.470405	556.835	0.6795605	755.4399
75975	244.640	11.813955	311.765	12.19893	0.429378	505.260	0.5492964	623.3220
78001	225.785	16.088725	311.765	12.19893	0.430684	516.375	0.8618585	1023.1357
78428	225.395	14.814645	311.765	12.19893	0.523328	575.229	0.8814664	973.9570
80167	232.670	13.590870	311.765	12.19893	0.374170	398.701	0.6298052	754.7735
82264	239.880	10.621729	311.765	12.19893	0.456190	402.296	0.5206071	552.6496
85406	234.690	10.705515	311.765	12.19893	0.407783	393.868	0.4913513	546.1488
86807	222.220	10.347030	311.765	12.19893	0.383166	335.362	0.4826539	527.5691
89490	228.130	11.854085	311.765	12.19893	0.448199	376.284	0.6170273	672.4441
91816	232.430	10.817200	311.765	12.19893	0.548471	550.162	0.6443136	652.6202
93907	238.210	12.882770	311.765	12.19893	0.379700	335.620	0.5780498	681.1231
96656	244.055	12.281340	311.765	12.19893	0.353974	308.498	0.5014318	603.2656
99188	243.085	9.735085	311.765	12.19893	0.430647	459.025	0.4369693	474.7097
101967	242.415	10.836270	311.765	12.19893	0.580318	599.873	0.6496686	665.6394
102747	237.070	11.904570	311.765	12.19893	0.361761	360.931	0.5068550	600.1613
104861	240.620	14.935930	311.765	12.19893	0.484685	523.547	0.8011177	930.7046
107565	238.385	12.305630	311.765	12.19893	0.581557	630.291	0.7487471	779.8686
110928	252.310	13.266150	311.765	12.19893	0.451387	494.791	0.6354708	736.2913
114230	264.240	11.368895	311.765	12.19893	0.526497	550.750	0.5731794	618.8930
115535	275.060	12.103225	311.765	12.19893	0.650182	736.731	0.7153441	743.4538
117705	274.980	15.665745	311.765	12.19893	0.467457	557.876	0.7372913	914.7509
118737	272.730	12.090160	311.765	12.19893	0.591169	658.868	0.6603966	709.6326
119619	271.165	13.376815	311.765	12.19893	0.575280	649.227	0.7227761	804.7457
121968	277.430	14.092390	311.765	12.19893	0.481000	546.812	0.6540001	792.1290
124468	278.530	12.453005	311.765	12.19893	0.494356	555.634	0.5713579	667.8827
126463	274.085	12.412600	311.765	12.19893	0.546565	612.847	0.6311697	708.3152
129122	268.440	13.892880	311.765	12.19893	0.489728	551.810	0.6717189	792.9570
130648	251.340	11.791140	311.765	12.19893	0.615587	671.074	0.7178434	738.4640
131332	241.130	10.680325	311.765	12.19893	0.575380	598.265	0.6390759	647.6757

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
132984	224.630	10.841310	311.765	12.19893	0.569515	576.840	0.6897723	685.5881
134767	212.430	12.392455	311.765	12.19893	0.554306	565.570	0.8079030	816.7208
137439	201.460	11.926565	311.765	12.19893	0.407824	402.337	0.6702657	709.9034
138097	198.865	11.480050	311.765	12.19893	0.479383	474.336	0.7257836	731.1684
141499	194.630	10.685910	311.765	12.19893	0.462746	435.188	0.6773697	676.8511
144323	195.305	11.442350	311.765	12.19893	0.499911	494.118	0.7582218	759.7981
144967	194.805	12.916365	311.765	12.19893	0.467325	475.067	0.8181975	853.2192
148580	198.795	10.440630	311.765	12.19893	0.536004	516.319	0.7199553	701.3036
151686	202.350	12.964835	311.765	12.19893	0.347492	318.821	0.6677090	755.9944
153838	197.540	11.242885	311.765	12.19893	0.525301	519.071	0.7628825	751.4284
154746	197.540	10.348605	311.765	12.19893	0.466467	473.032	0.6496033	645.7606
155018	196.300	10.313355	311.765	12.19893	0.530626	570.840	0.7163867	686.4995
156122	192.840	12.884660	311.765	12.19893	0.366830	400.646	0.7207782	781.7976
157554	189.190	13.089500	311.765	12.19893	0.471197	523.752	0.8570010	875.2777
158915	187.250	13.276425	311.765	12.19893	0.467446	499.591	0.8735881	894.7552
160619	187.500	9.514260	311.765	12.19893	0.610210	561.909	0.7820524	676.4003
161695	187.500	12.010360	311.765	12.19893	0.446639	466.706	0.7714887	780.5944
162919	204.300	11.019520	311.765	12.19893	0.467616	557.340	0.6658199	674.2100
163882	200.400	11.145145	311.765	12.19893	0.443579	446.963	0.6635247	680.8876
164970	196.500	10.211168	311.765	12.19893	0.482802	480.064	0.6616631	635.9297
165836	191.600	12.244175	311.765	12.19893	0.440028	452.826	0.7617286	785.8573
167203	188.400	9.721515	311.765	12.19893	0.528851	550.686	0.7101146	665.6013
168643	185.250	12.880855	311.765	12.19893	0.491368	524.007	0.8822084	890.8914
169889	196.600	12.119125	311.765	12.19893	0.464273	491.173	0.7583771	783.1528
171139	197.200	10.251235	311.765	12.19893	0.532404	542.029	0.7109488	688.4134
171398	197.200	9.795615	311.765	12.19893	0.505406	509.456	0.6566416	636.9160
172514	197.750	11.878105	311.765	12.19893	0.582990	662.103	0.8598858	840.1956
172930	197.750	9.116090	311.765	12.19893	0.597110	623.266	0.7045808	647.1553
174149	197.700	9.733125	311.765	12.19893	0.466567	512.202	0.6124603	604.9113
175288	196.850	11.109840	311.765	12.19893	0.497959	542.365	0.7298321	728.0780
175565	196.850	11.614275	311.765	12.19893	0.536219	570.914	0.7995036	790.8975
176896	189.850	10.283620	311.765	12.19893	0.549047	605.307	0.7586593	715.9207
177960	190.100	12.862945	311.765	12.19893	0.511227	568.414	0.8800456	883.4234

age [cal yr BP]	palaeo CO2 [umol/mol]	palaeo MGS temp [°C]	modern CO2 [umol/mol]	modern MGS temp [°C]	recon. MI [-]	recon. Pann [mm/day]	corrected MI [-]	estimated Pann [mm/day]
179446	198.900	12.538305	311.765	12.19893	0.460554	454.328	0.7712496	804.6271
179707	207.700	12.398400	311.765	12.19893	0.356645	340.950	0.6233208	698.7555
181254	213.200	12.878315	311.765	12.19893	0.378381	389.529	0.6547220	738.2021
181849	215.450	12.580135	311.765	12.19893	0.397286	450.153	0.6485913	721.7636
182354	207.900	10.924135	311.765	12.19893	0.337109	290.629	0.5162886	567.8381
183523	198.900	10.255550	311.765	12.19893	0.364258	389.596	0.5368531	559.9452
184818	199.700	9.837763	311.765	12.19893	0.499713	478.917	0.6441735	587.8632
186603	207.050	11.920440	311.765	12.19893	0.368120	373.086	0.6089746	666.1387
189340	221.000	10.674150	311.765	12.19893	0.464490	442.187	0.5862542	611.8613
190307	231.350	9.972993	311.765	12.19893	0.506649	612.275	0.5568394	551.3358
191709	225.850	10.294565	311.765	12.19893	0.442095	502.227	0.5273021	560.8692
192795	219.150	10.022120	311.765	12.19893	0.479334	474.041	0.5688464	584.5354
194581	226.500	10.191110	311.765	12.19893	0.496187	495.060	0.5730713	595.5329
194846	226.500	11.431140	311.765	12.19893	0.441957	453.222	0.5909473	648.4792
195710	223.250	11.487825	311.765	12.19893	0.478354	491.296	0.6408374	685.6363