

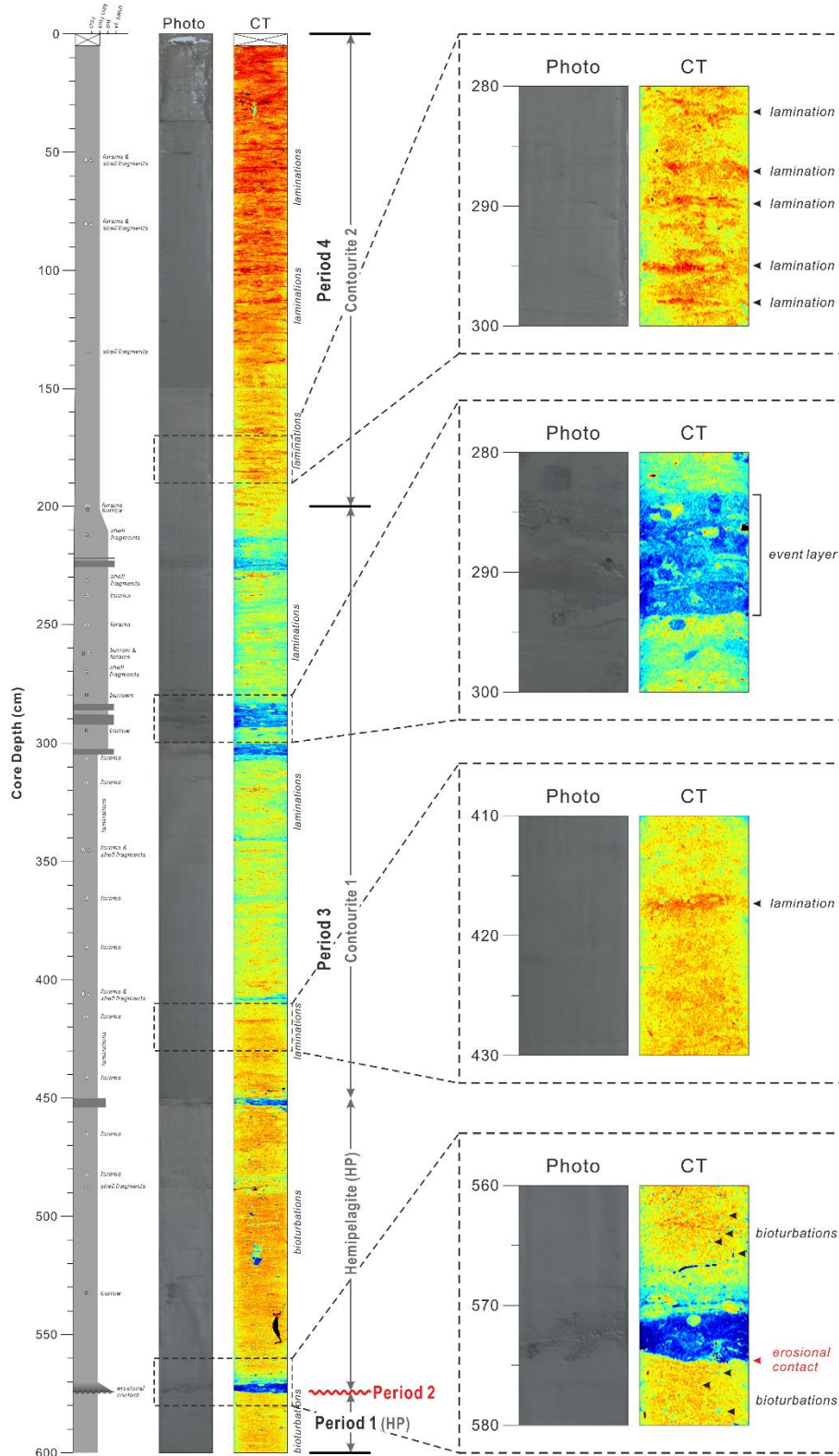
Supplementary Table 1: Radiocarbon dating results of 7 samples at the top 600 cm of core MD18-3545

Sample ID	Lab Code	Depth (cm)	¹⁴ C Age (year BP ^a with 2σ error)	Calendric age ^b (median year BP)	1σ distribution	2σ distribution	Species
MD18-3545_110	NTUAMS-6198	110-111	6,925 ± 70	6,627	6,513 – 6,734	6,406 – 6,845	<i>Globigerinoides ruber</i> <i>Trilobatus sacculifer</i>
MD18-3545_190	NTUAMS-6199	190-191	6,759 ± 88	6,448	6,317 – 6,555	6,216 – 6,681	<i>Globigerinoides ruber</i> <i>Trilobatus sacculifer</i>
MD18-3545_250	NTUAMS-6200	250-251	7,434 ± 75	7,199	7,098 – 7,309	6,986 – 7,404	<i>Globigerinoides ruber</i> <i>Trilobatus sacculifer</i>
MD18-3545_310	NTUAMS-6201	310-311	10,884 ± 76	11,329	11,190 – 11,447	11,100 – 11,623	<i>Globigerinoides ruber</i> <i>Trilobatus sacculifer</i>
MD18-3545_430	NTUAMS-6202	430-431	8,634 ± 106	8,386	8,254 – 8,524	8,110 – 6,861	<i>Globigerinoides ruber</i> <i>Trilobatus sacculifer</i>
MD18-3545_470	NTUAMS-6203	470-471	9,356 ± 80	9,300	9,194 – 9,427	9,057 – 9,504	<i>Globigerinoides ruber</i> <i>Trilobatus sacculifer</i>
MD18-3545_590	NTUAMS-6204	590-591	32,474 ± 343	35,547	35,212 – 35,933	34,766 – 36,224	<i>Globigerinoides ruber</i> <i>Trilobatus sacculifer</i> <i>Orbulina universa</i> <i>Globigerinoides conglobatus</i>

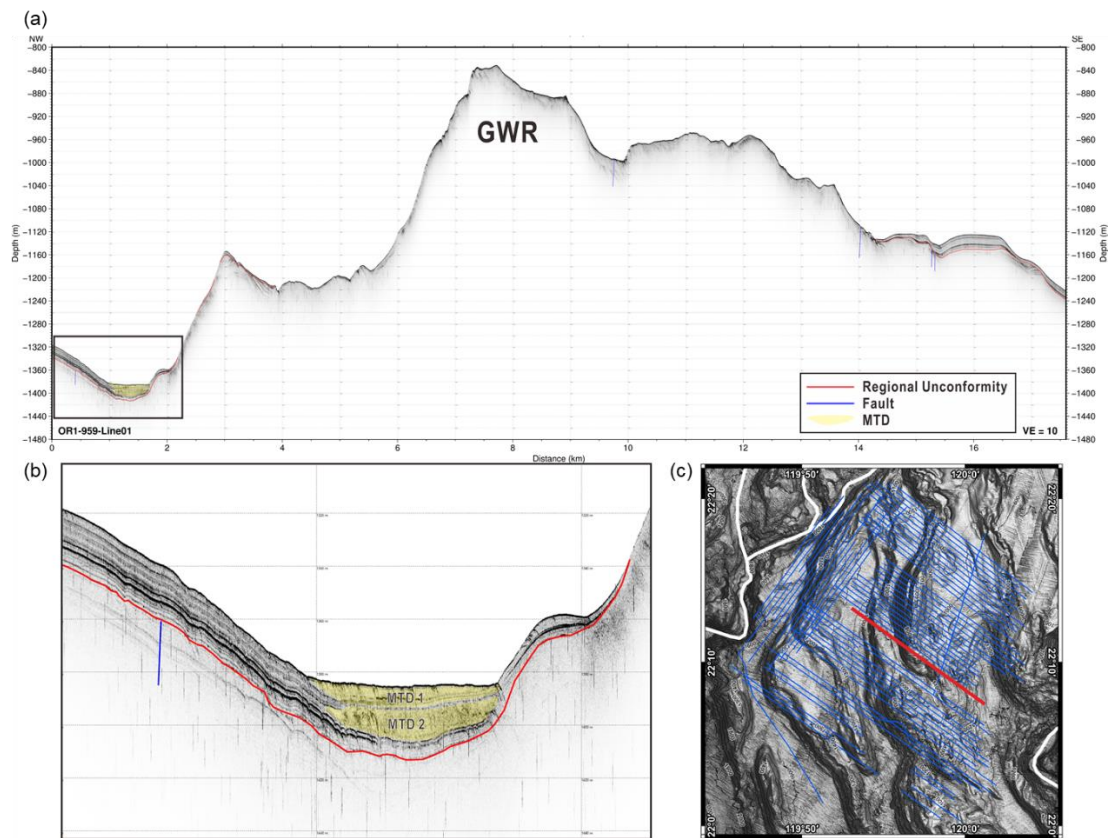
^aBP: Before Present. The present is AD 1950 in the C-14 dating method.

^b Calendric ages were calibrated by the “Calib 8.2” software with MARINE20 calibration curve, ΔR = 550.

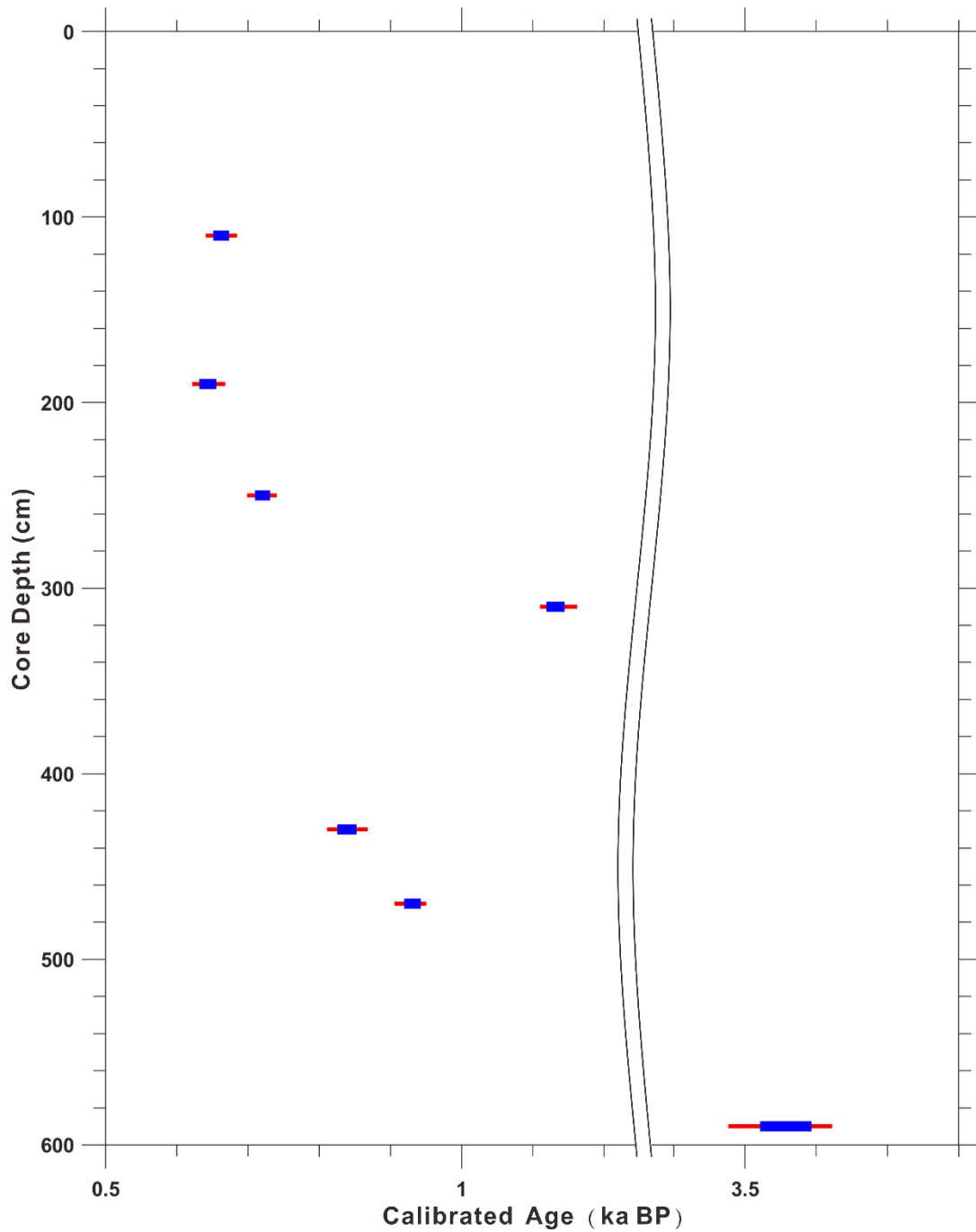
P.S. Four species of planktonic foraminifera are used for the dating. The dating of each sample was finished in NTUAMS Lab and calibrated by the “Calib 8.2” software with the MARINE20 calibration curve.



Supplementary Figure 1: Core description, photo and CT image of the top 600 cm of core MD18-3545. This figure shows the detailed core description, core photo and CT image. Notice that the image between the core depths 560 to 580 cm contains the regional unconformity; the sharp contact at the base and upward fining grading shows the process from erosion to deposition.

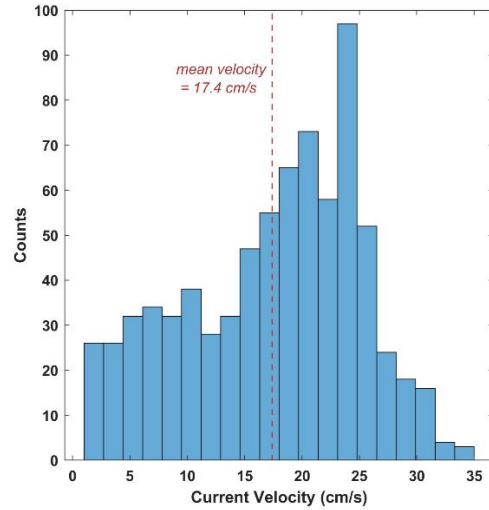
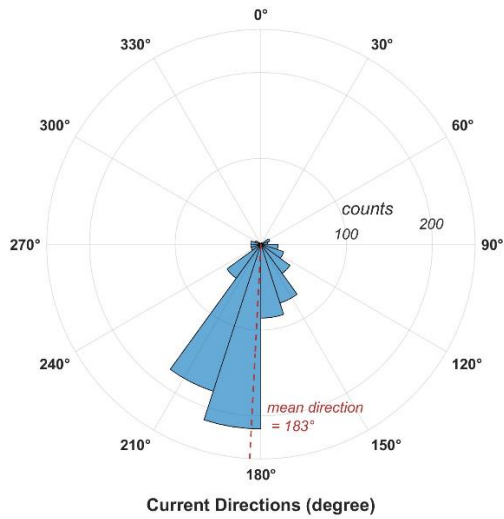


Supplementary Figure 2: The MTDs in the west of the GWR. (a) SBP profile shows the mass transport deposits (MTDs) in the strata above the regional unconformity in the west of the GWR. The black rectangle indicates the enlarge segment in (b). (c) The index map of the profile (a).



Supplementary Figure 3: Radiocarbon dating calibrated age-depth plot.

The blue thicker lines and red thinner lines show the 1σ and 2σ distributions of the age calibrated result.



Supplementary Figure 4: Statistical diagrams of the ADCP data in the study area. (left) The rose diagram shows the distribution of bottom current directions. There is a high consistency of the bottom current directions and the mean direction is 183° . (right) The distribution of the bottom current velocities. The range of current velocity is from 1.2 to 34.9 cm/s and the mean velocity is 17.4 cm/s.