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*Supplement of*

## **Back to the future II: tidal evolution of four supercontinent scenarios**

**Hannah S. Davies et al.**

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### Introduction

This file contains supporting information for the paper Davies et al., entitled “**Back to the future II: tidal evolution of four supercontinent scenarios**”. Here we provide 20 million-year snapshots of the  $M_2$  global tidal amplitude for the four future supercontinent scenarios presented, each illustrating a different mode of supercontinent formation. See main text for details.

Figures S1a – n: Pangea Ultima is characterized by the closure of the Atlantic.

Figures S2a – k: Novopangea in contrast forms via the closure of the Pacific ocean.

Figures S3a – n: Aurica is formed by closure of both the Atlantic and the Pacific oceans.

Figures S4a – k: Amasia forms by the closure of the Arctic Ocean.

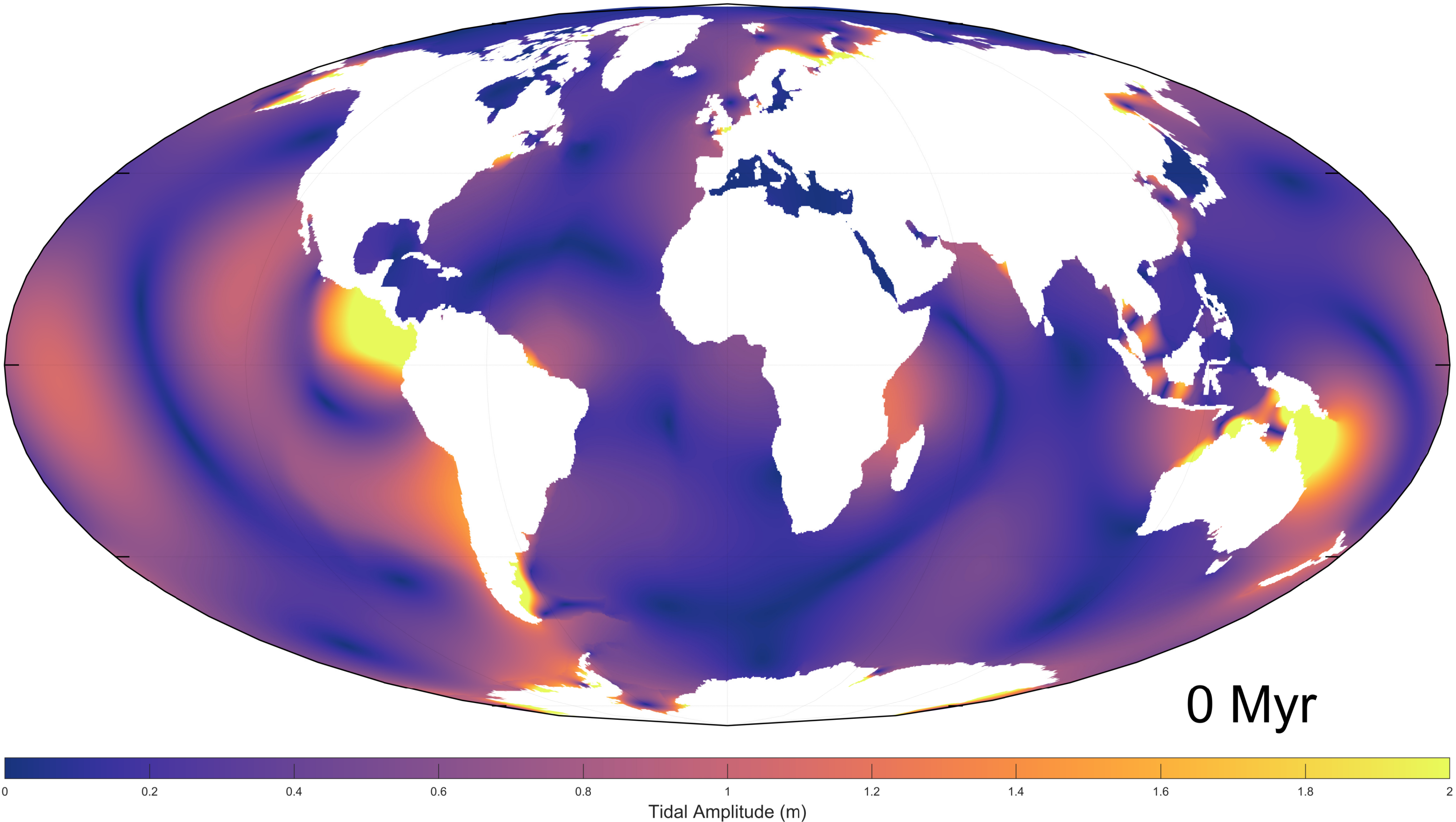


Figure S1a: Global M2 amplitudes for the (0 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.

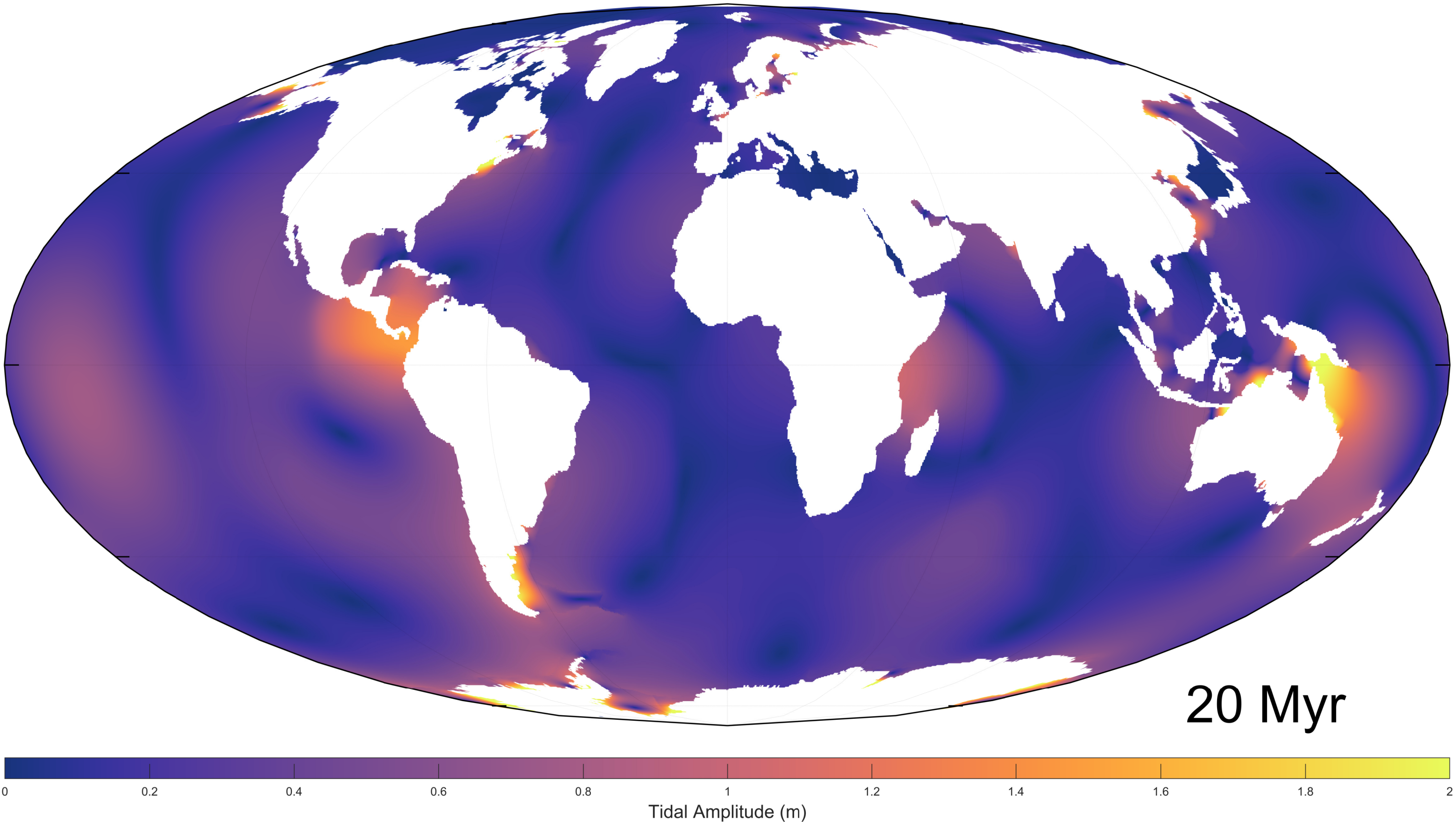
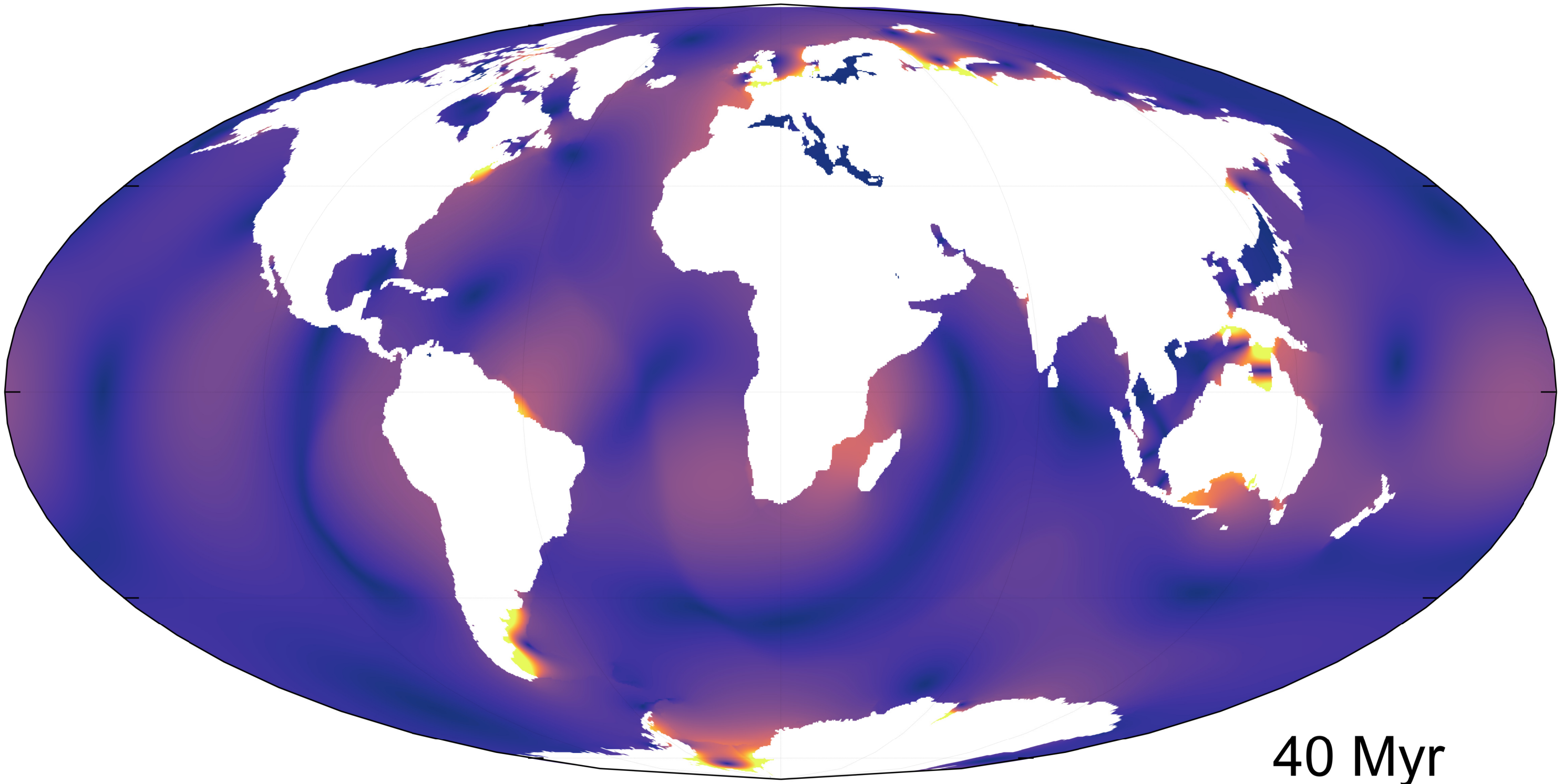
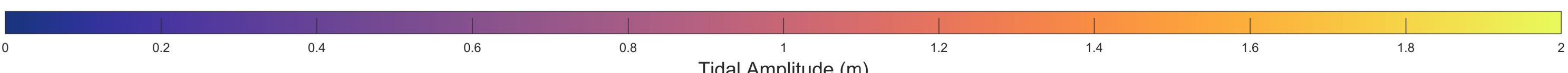


Figure S1b: Global M2 amplitudes for the (20 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.

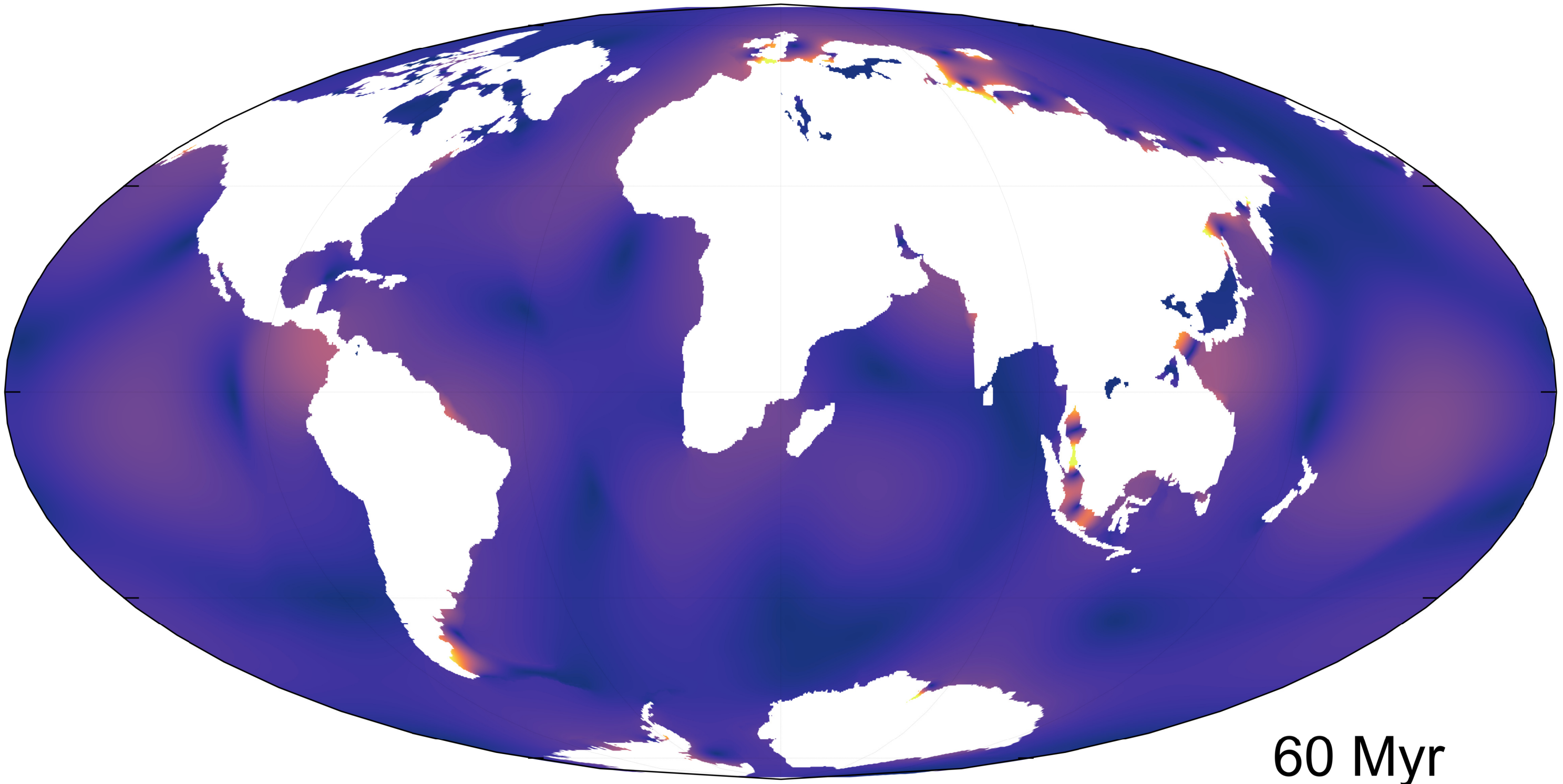


40 Myr



Tidal Amplitude (m)

Figure S1c: Global M2 amplitudes for the (40 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.

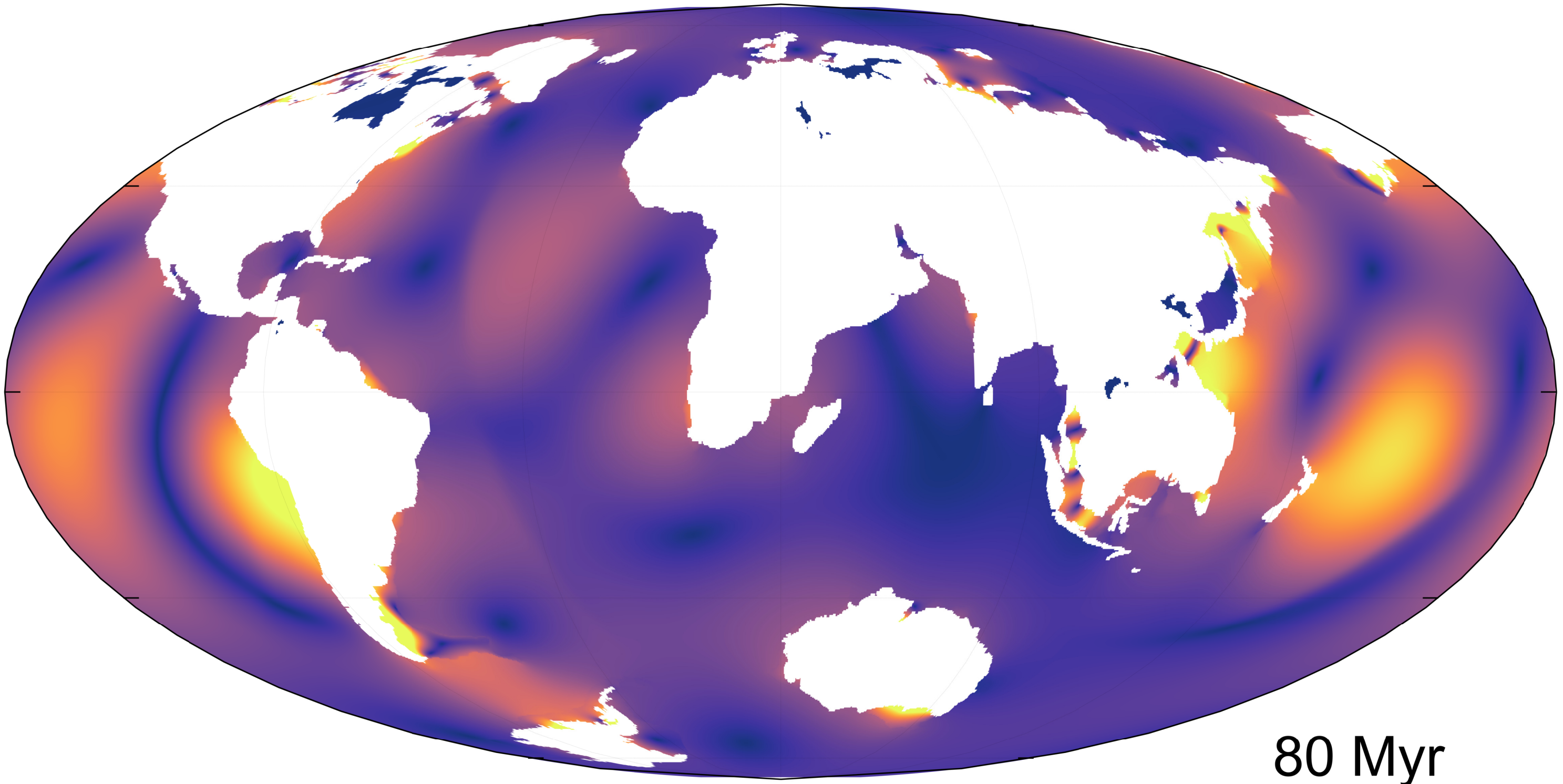


60 Myr

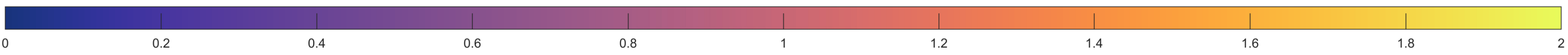


Tidal Amplitude (m)

Figure S1d: Global M2 amplitudes for the (60 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.



80 Myr



Tidal Amplitude (m)

Figure S1e: Global M2 amplitudes for the (80 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.

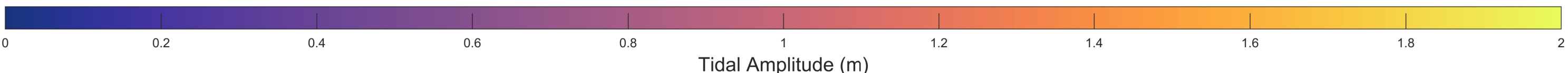
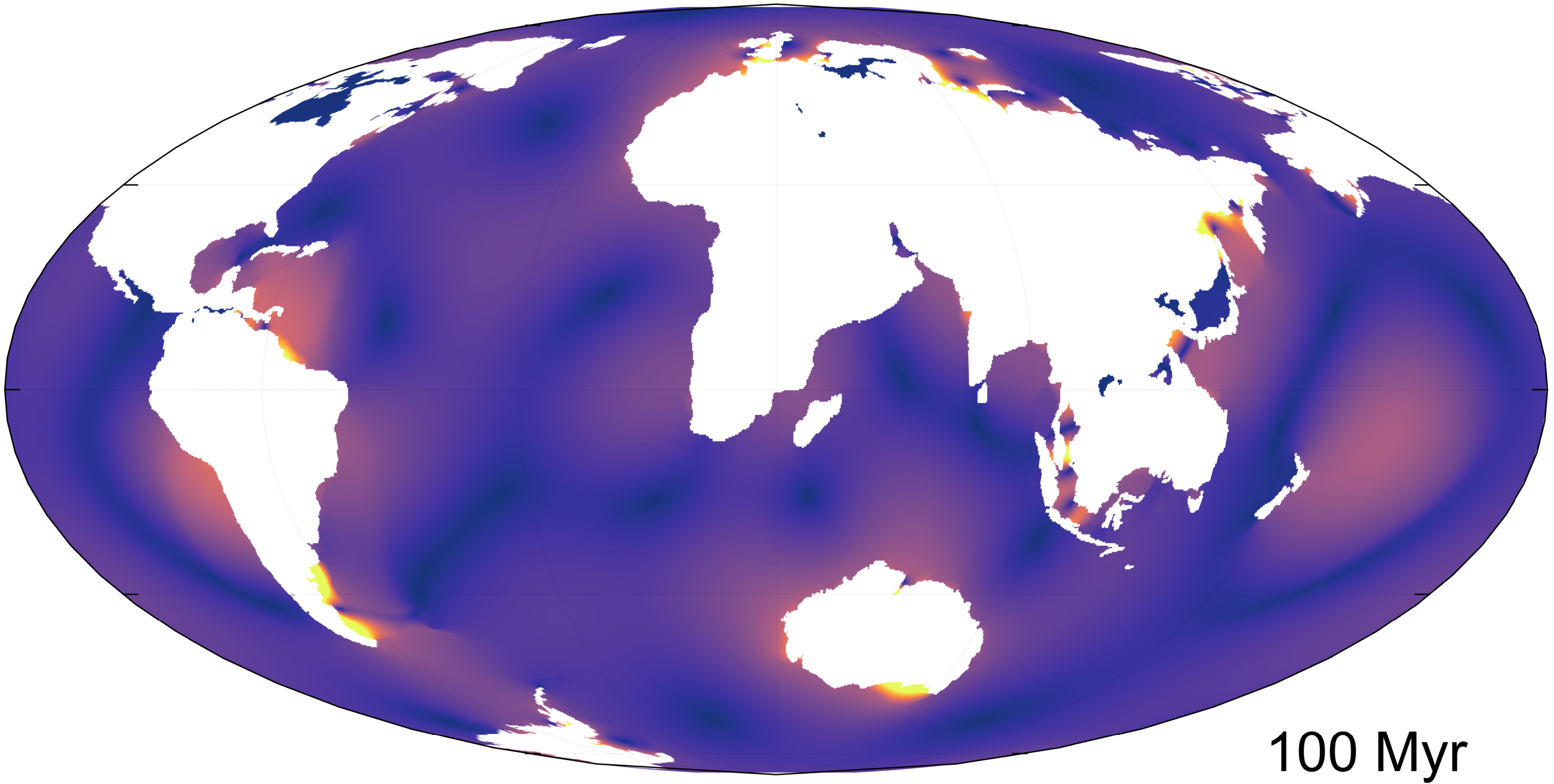
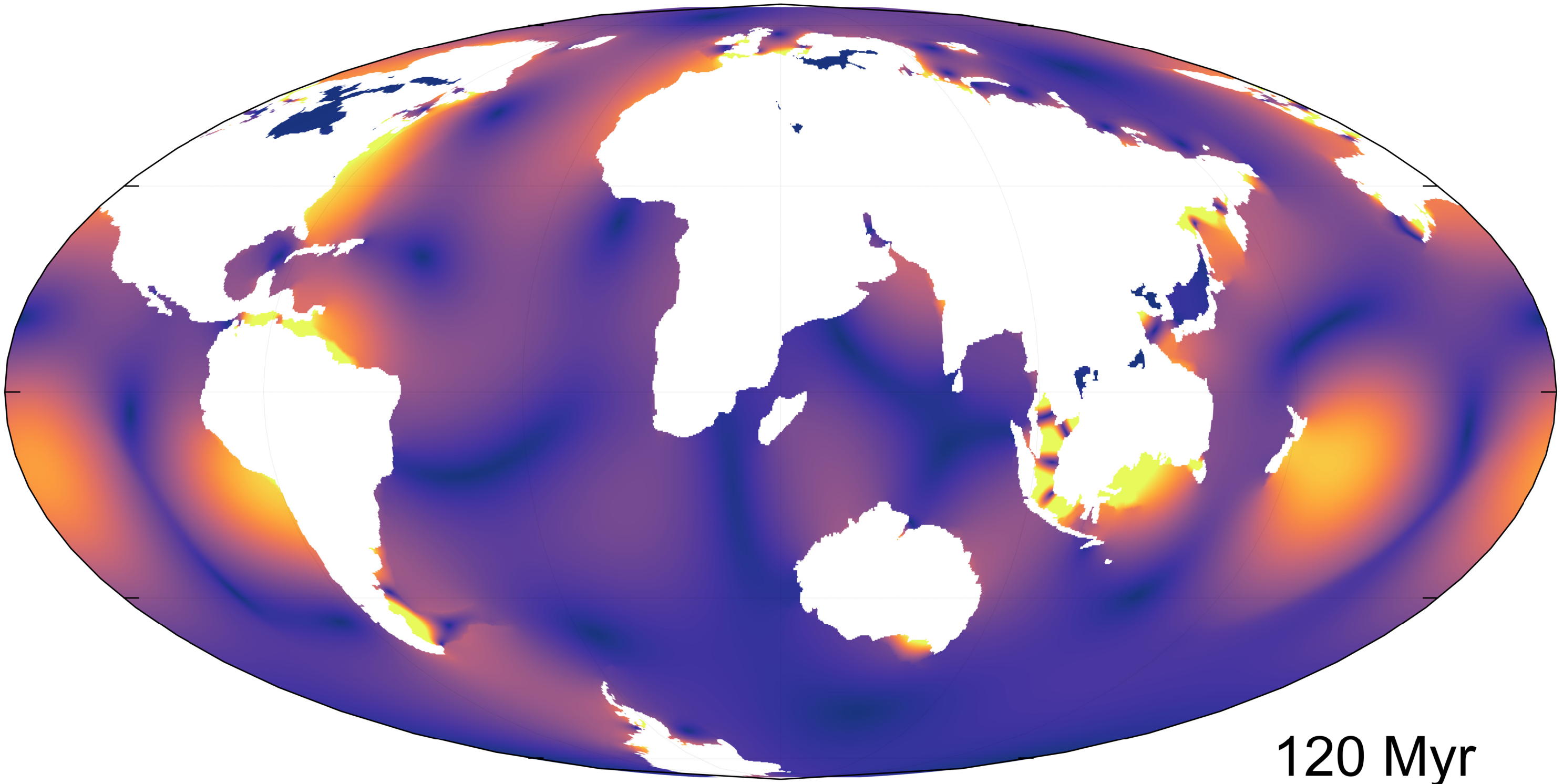


Figure S1f: Global M2 amplitudes for the (100 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.





120 Myr

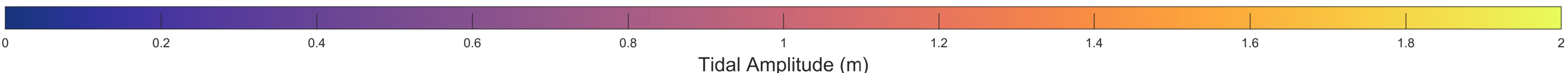


Figure S1g: Global M2 amplitudes for the (120 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.

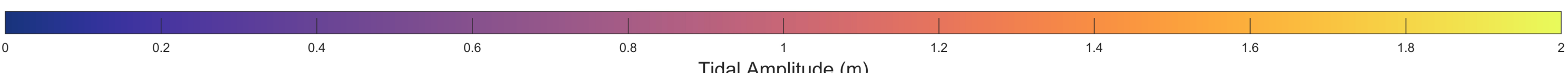
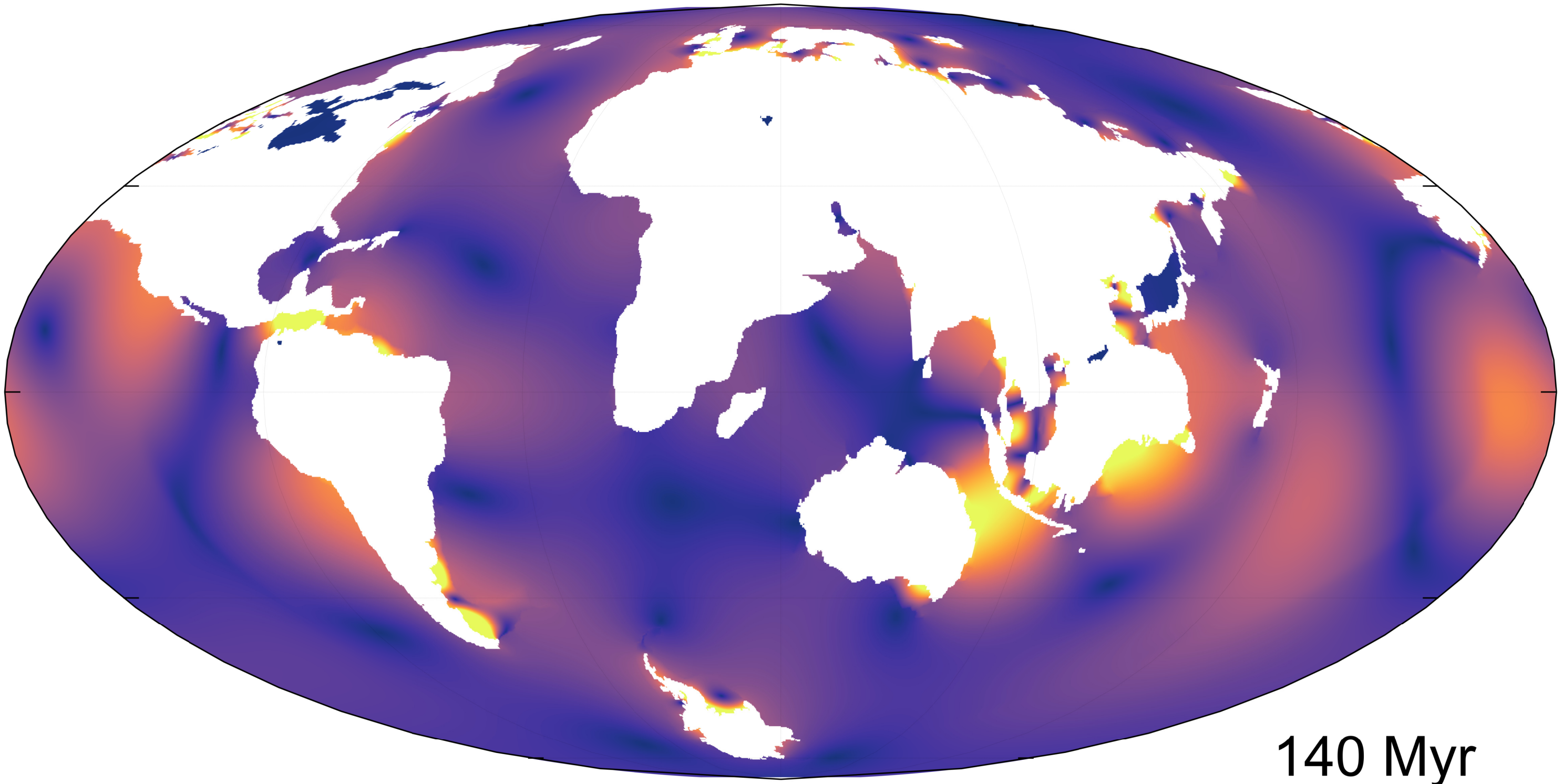
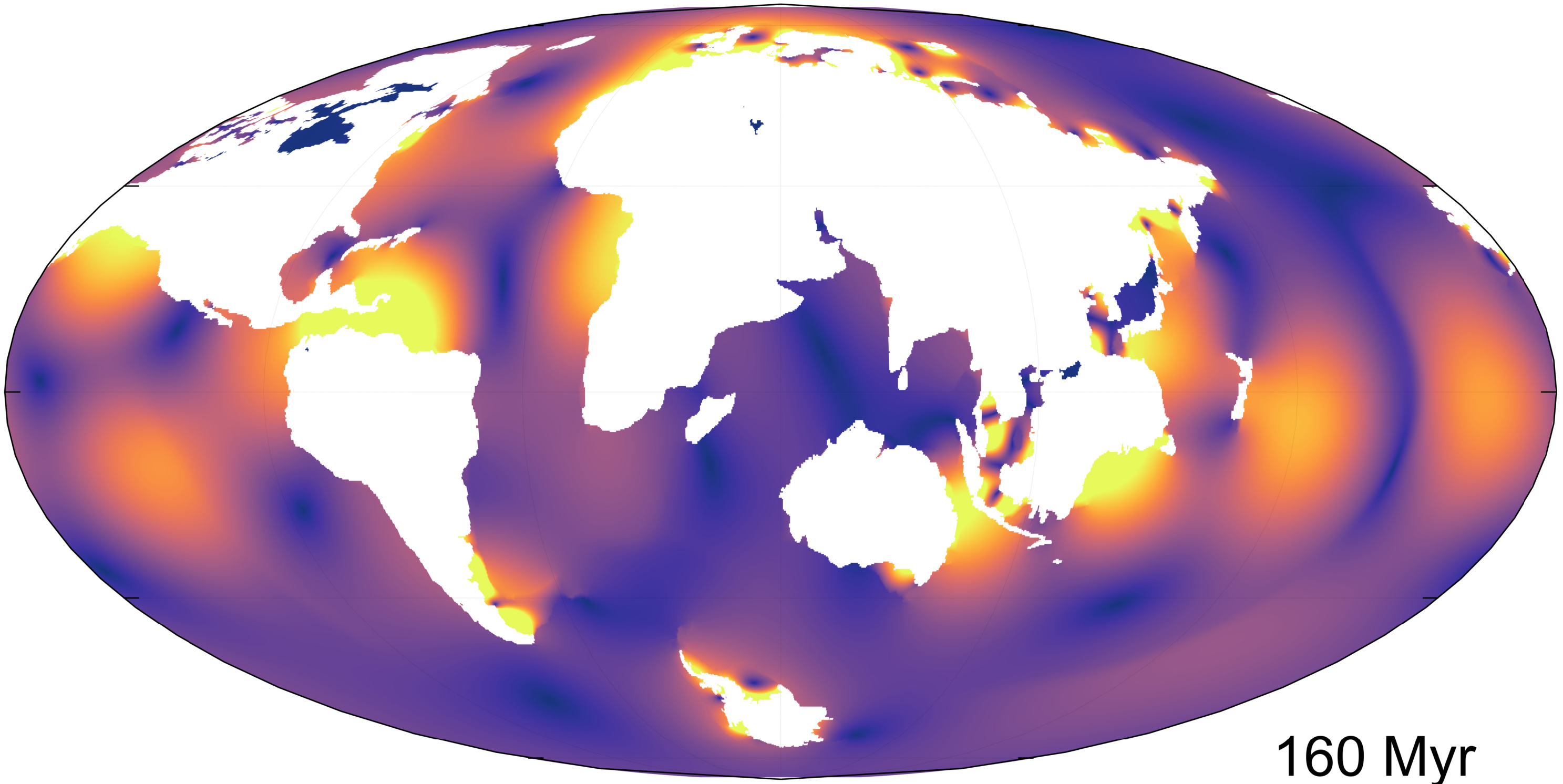
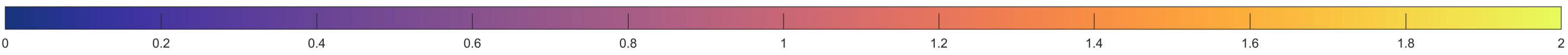


Figure S1h: Global M2 amplitudes for the (140 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.

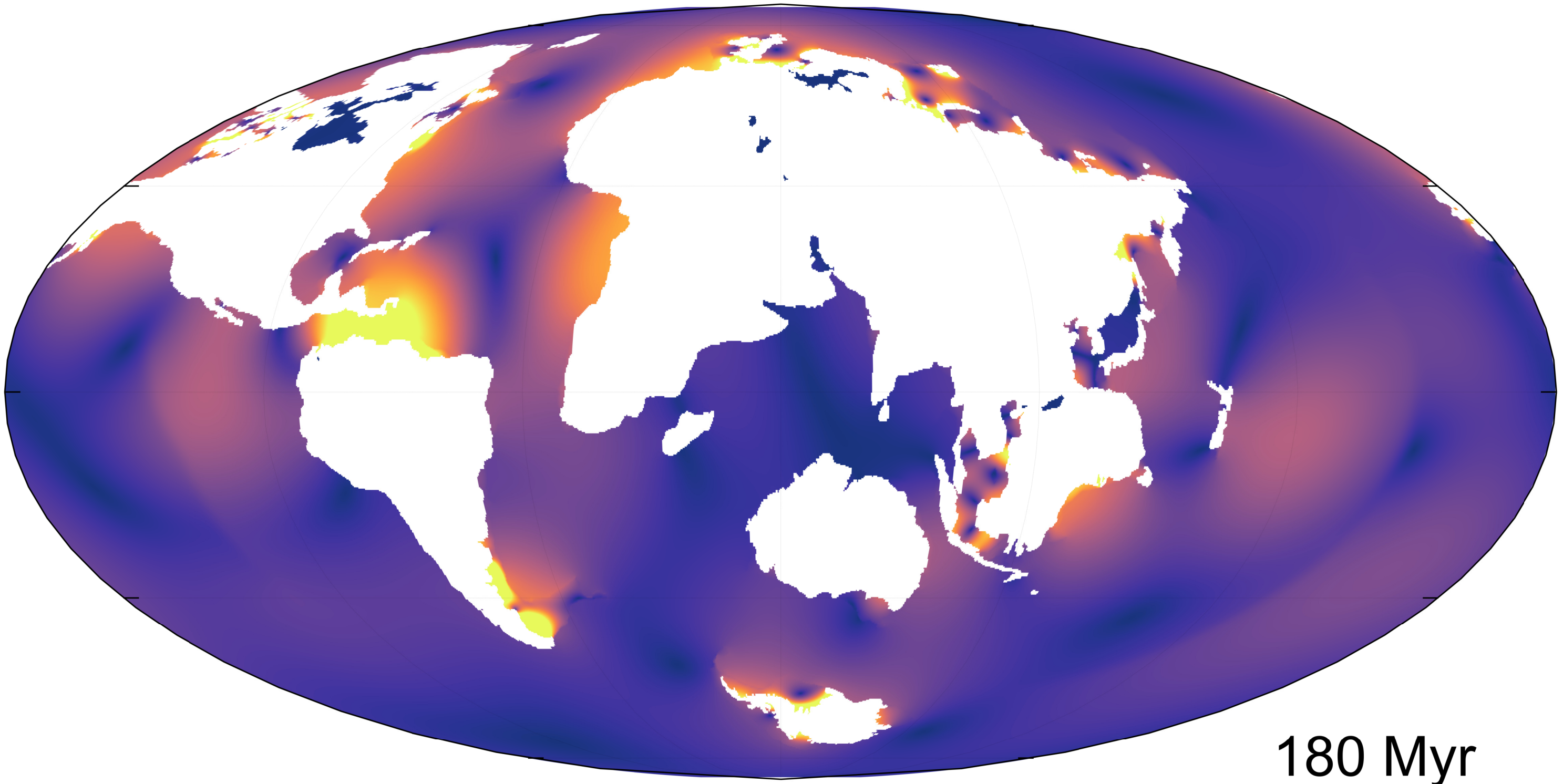


160 Myr

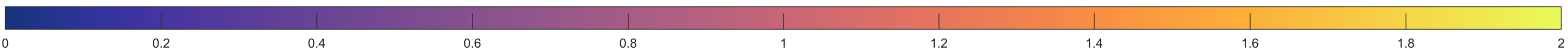


Tidal Amplitude (m)

Figure S1i: Global M2 amplitudes for the (160 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.



180 Myr



Tidal Amplitude (m)

Figure S1j: Global M2 amplitudes for the (180 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.

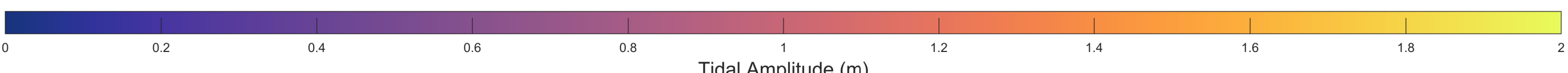
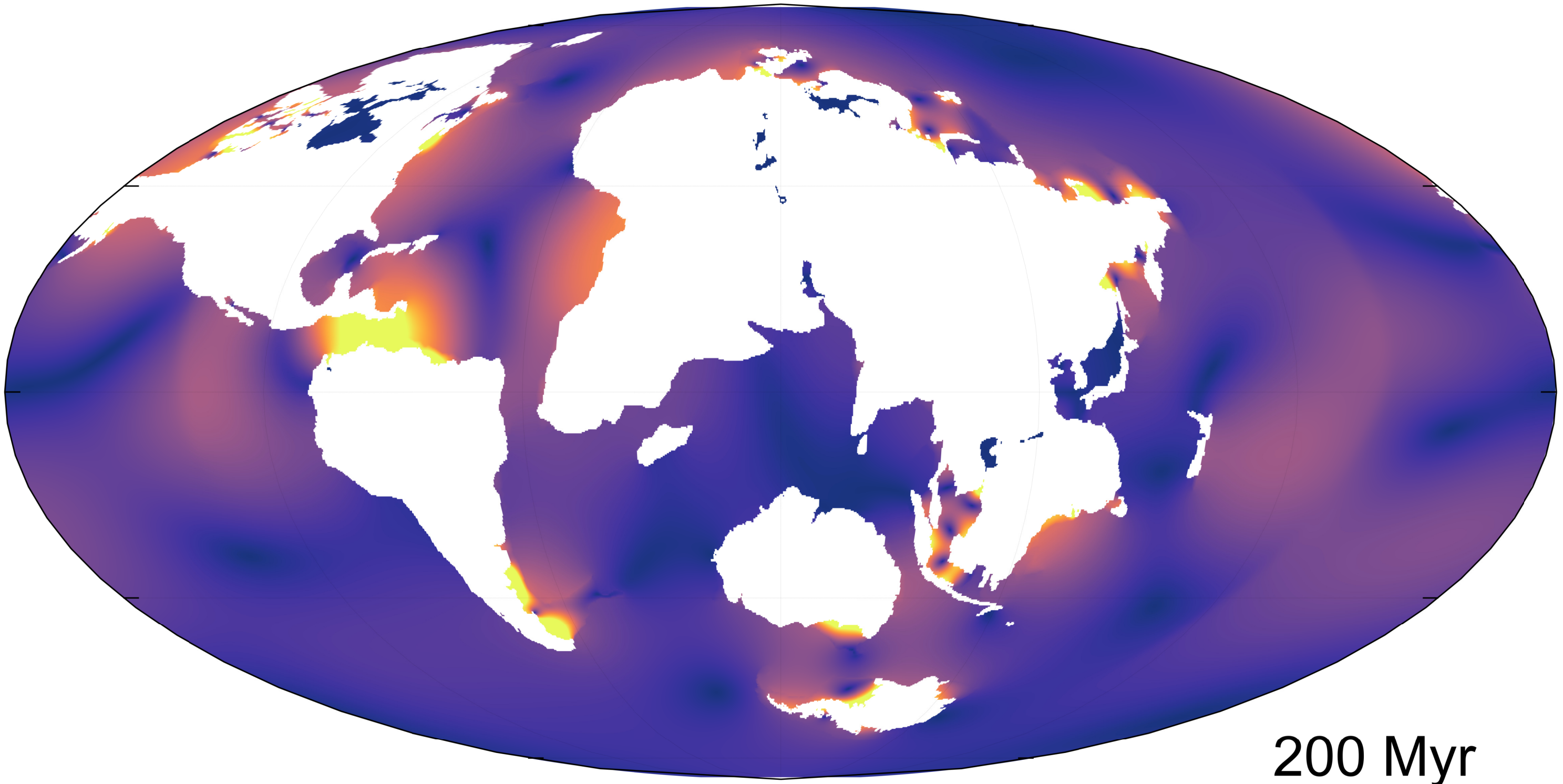
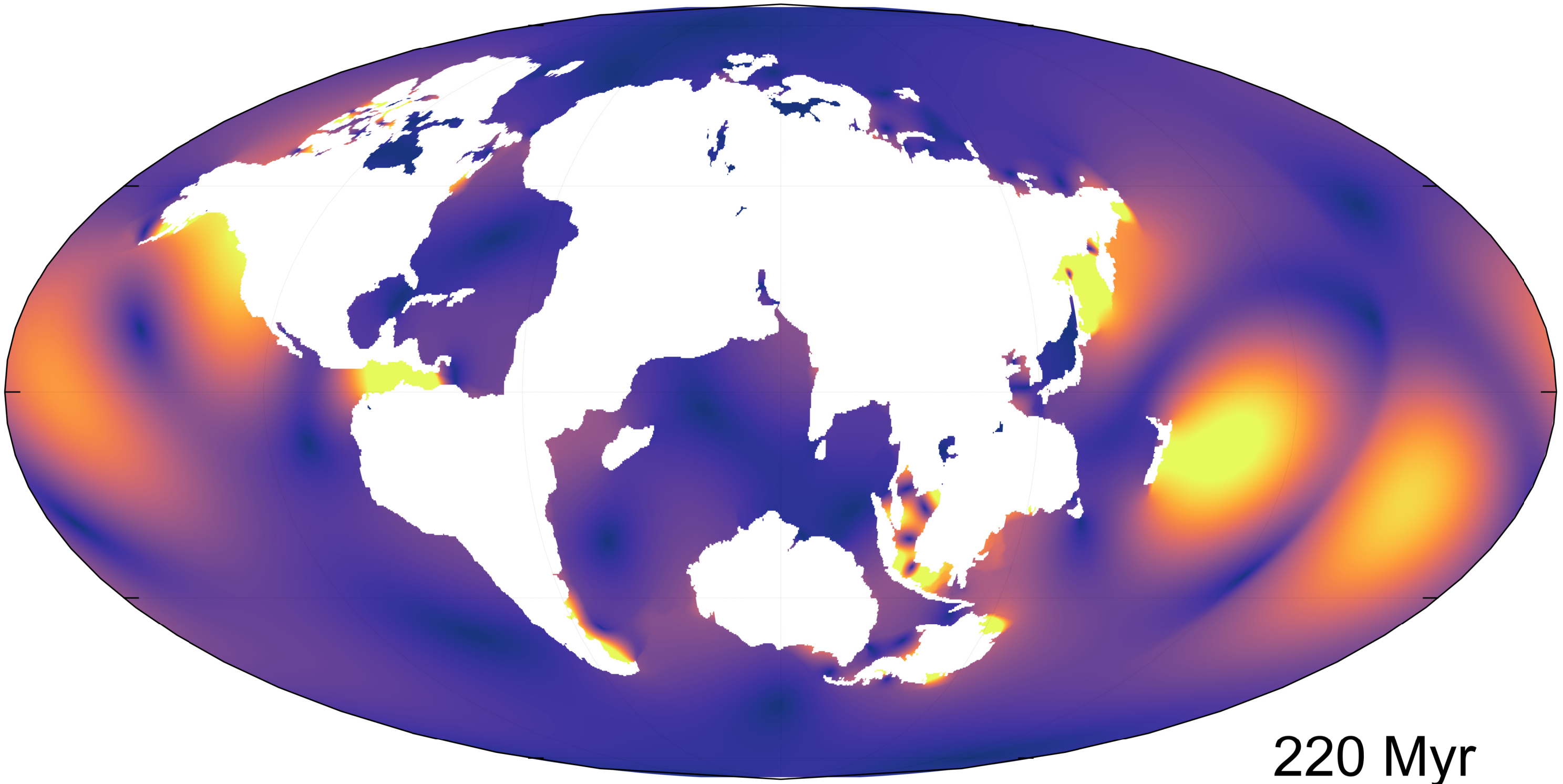
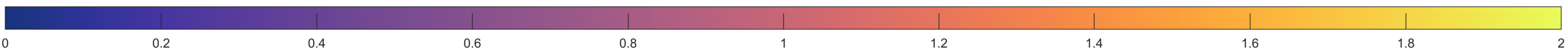


Figure S1k: Global M2 amplitudes for the (200 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.

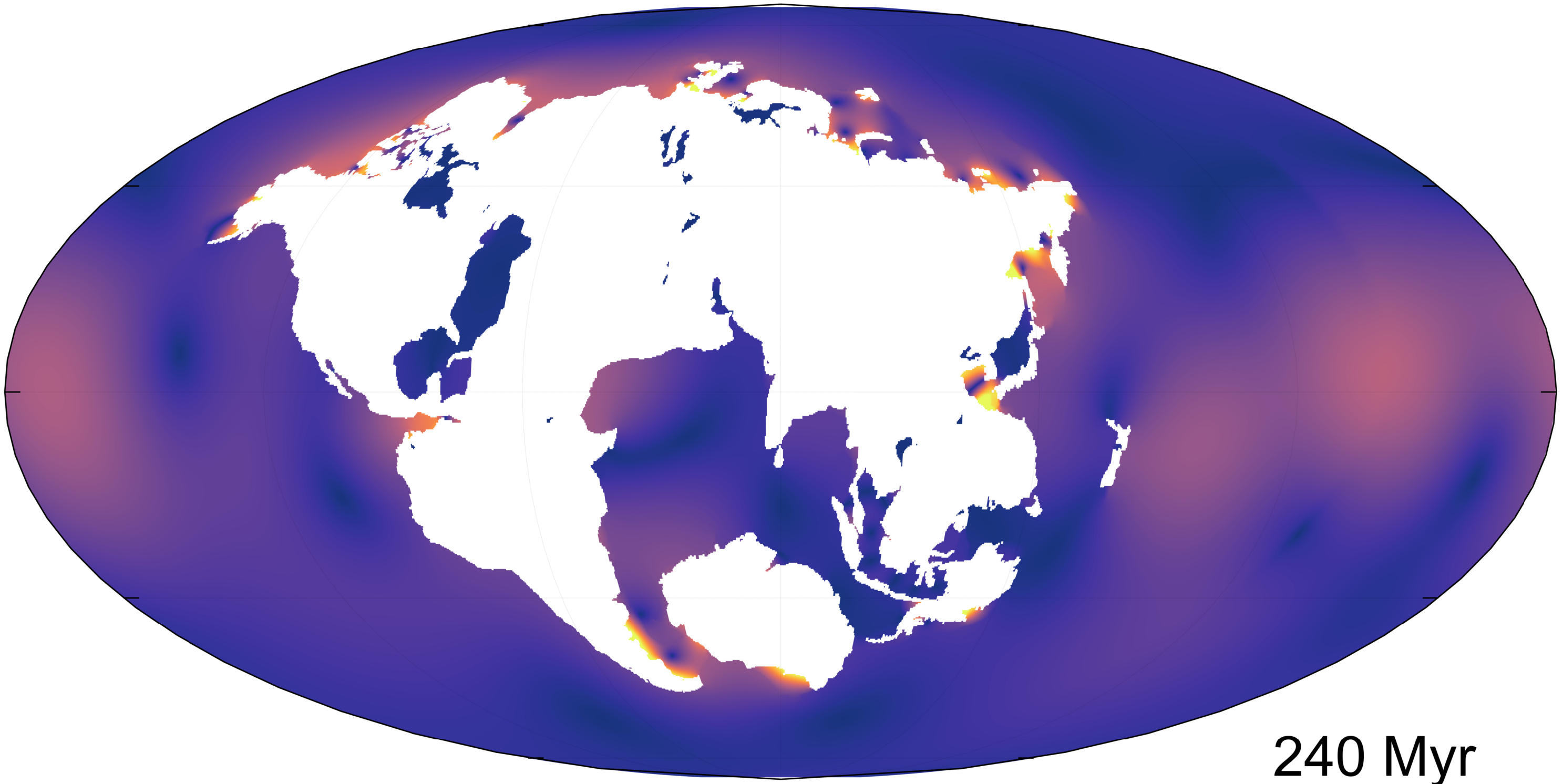


220 Myr

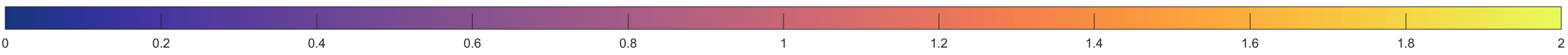


Tidal Amplitude (m)

Figure S11: Global M2 amplitudes for the (220 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.

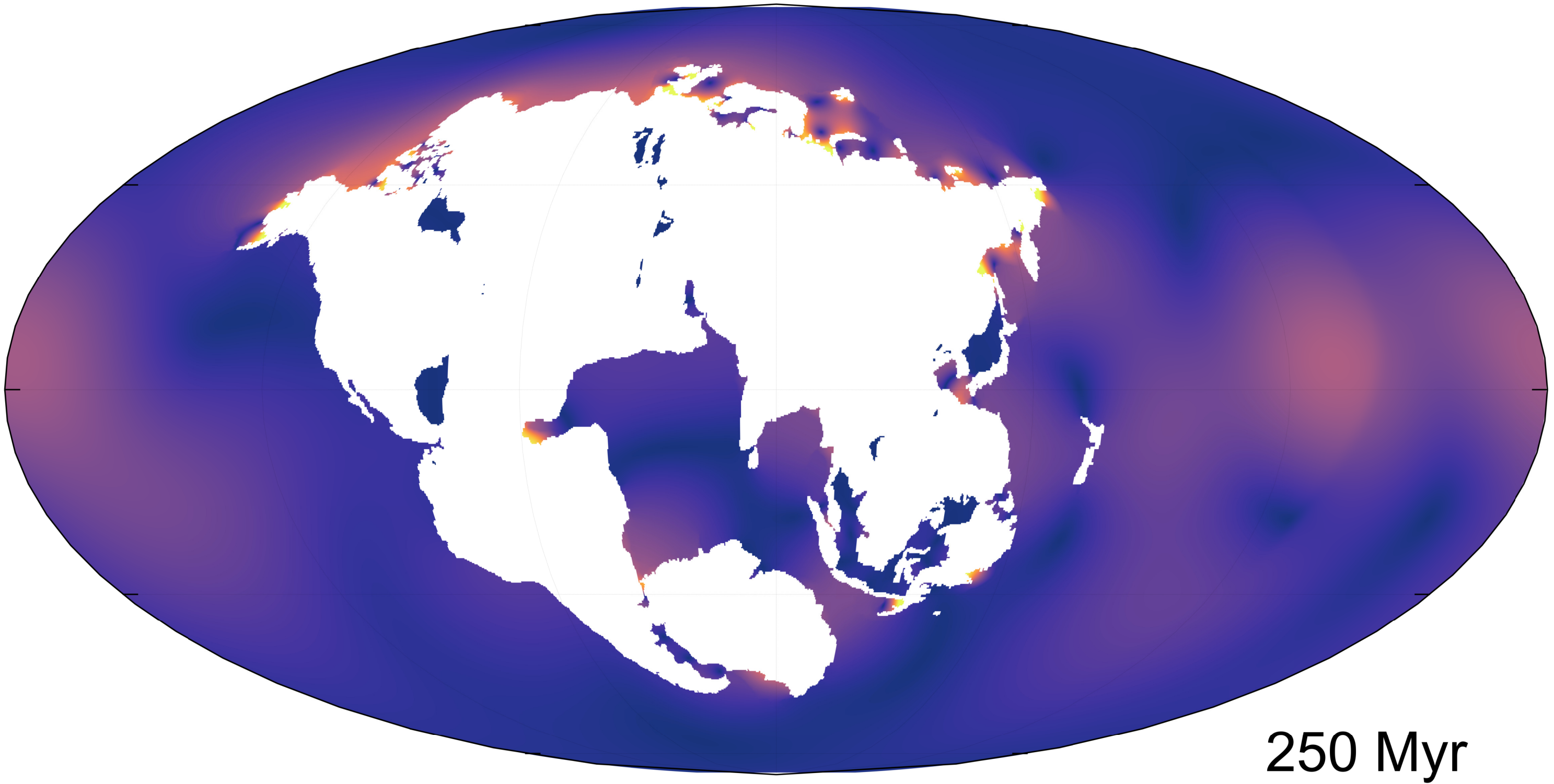


240 Myr

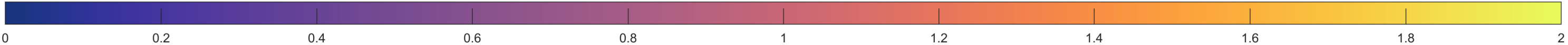


Tidal Amplitude (m)

Figure S1m: Global M2 amplitudes for the (240 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.



250 Myr



Tidal Amplitude (m)

Figure S1n: Global M2 amplitudes for the (250 Myr) timeslice of the Pangea Ultima scenario. The colour scale saturates at 2 m.



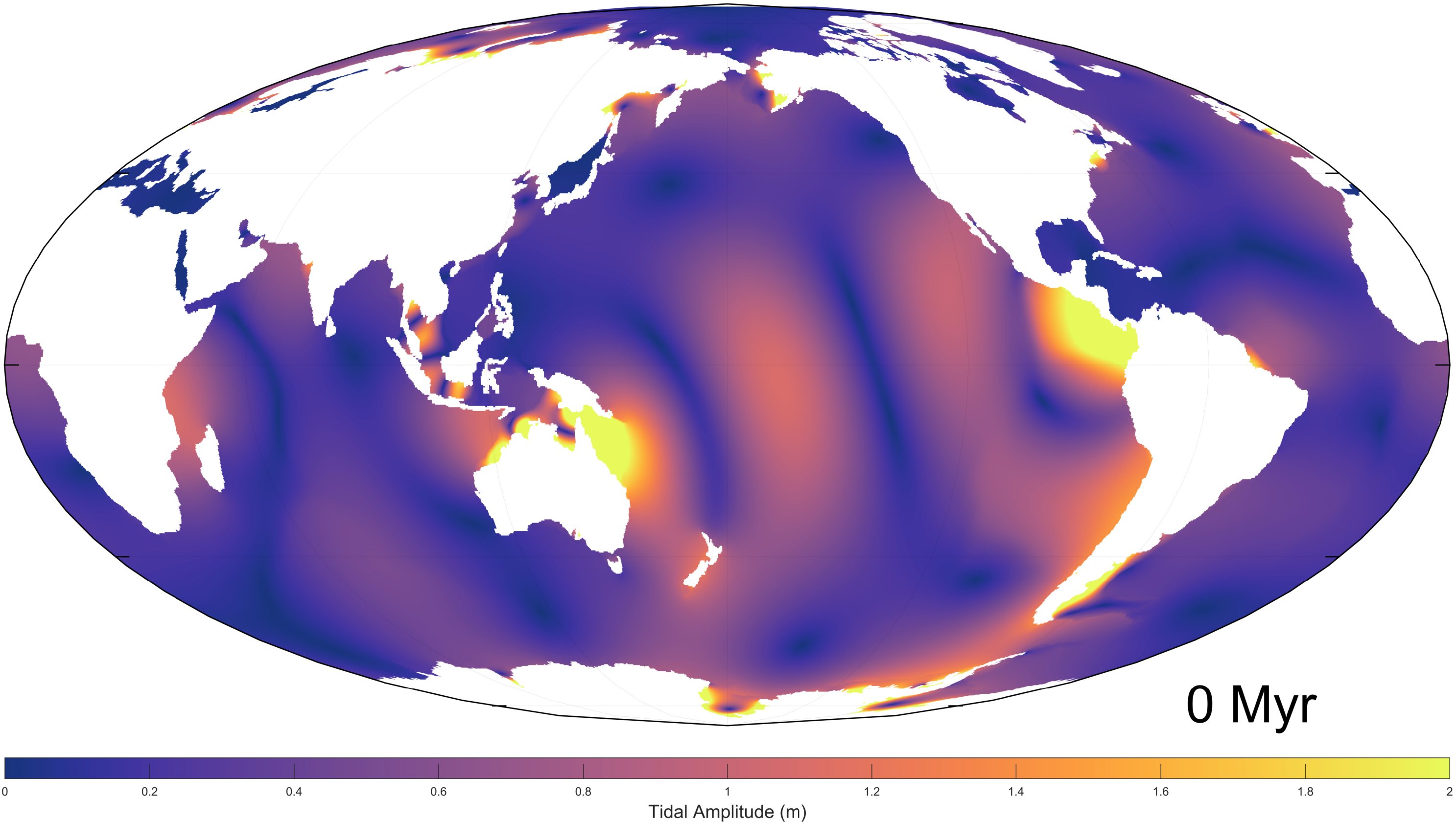


Figure S2a: Global M2 amplitudes for the (0 Myr) timeslice of the Novopangea scenario. The colour scale saturates at 2 m.

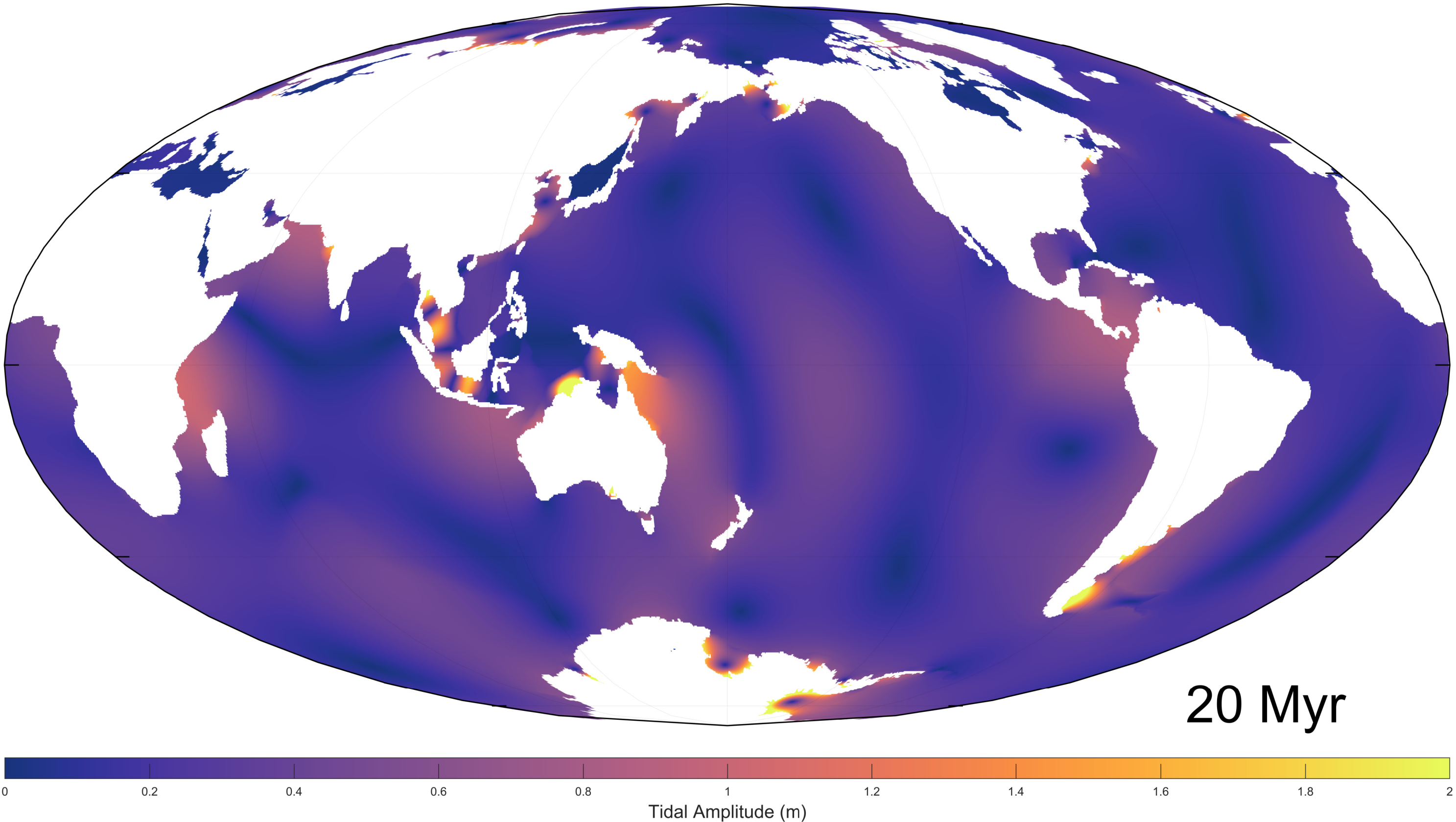


Figure S2b: Global M2 amplitudes for the (20 Myr) timeslice of the Novopangea scenario. The colour scale saturates at 2 m.

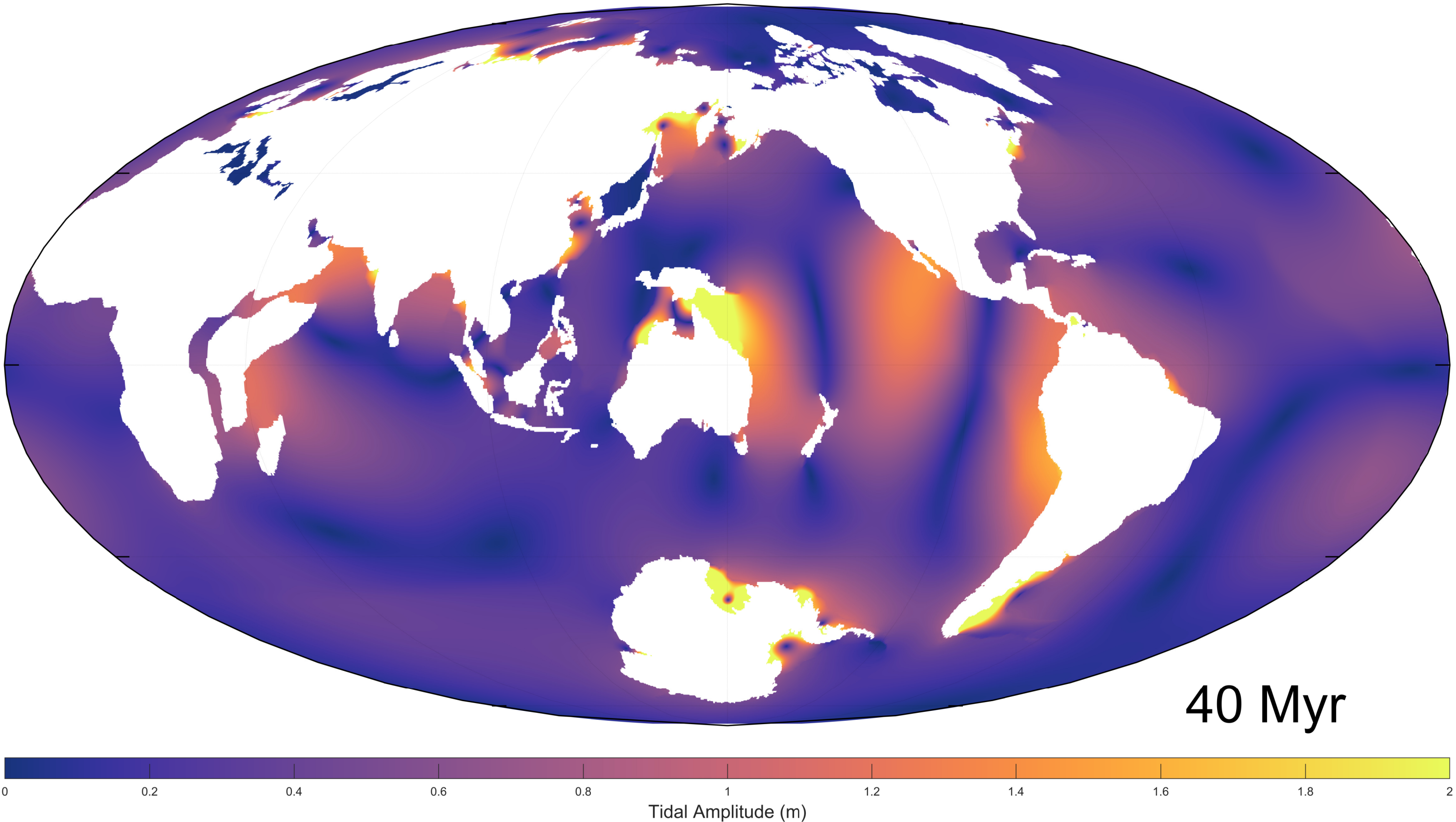
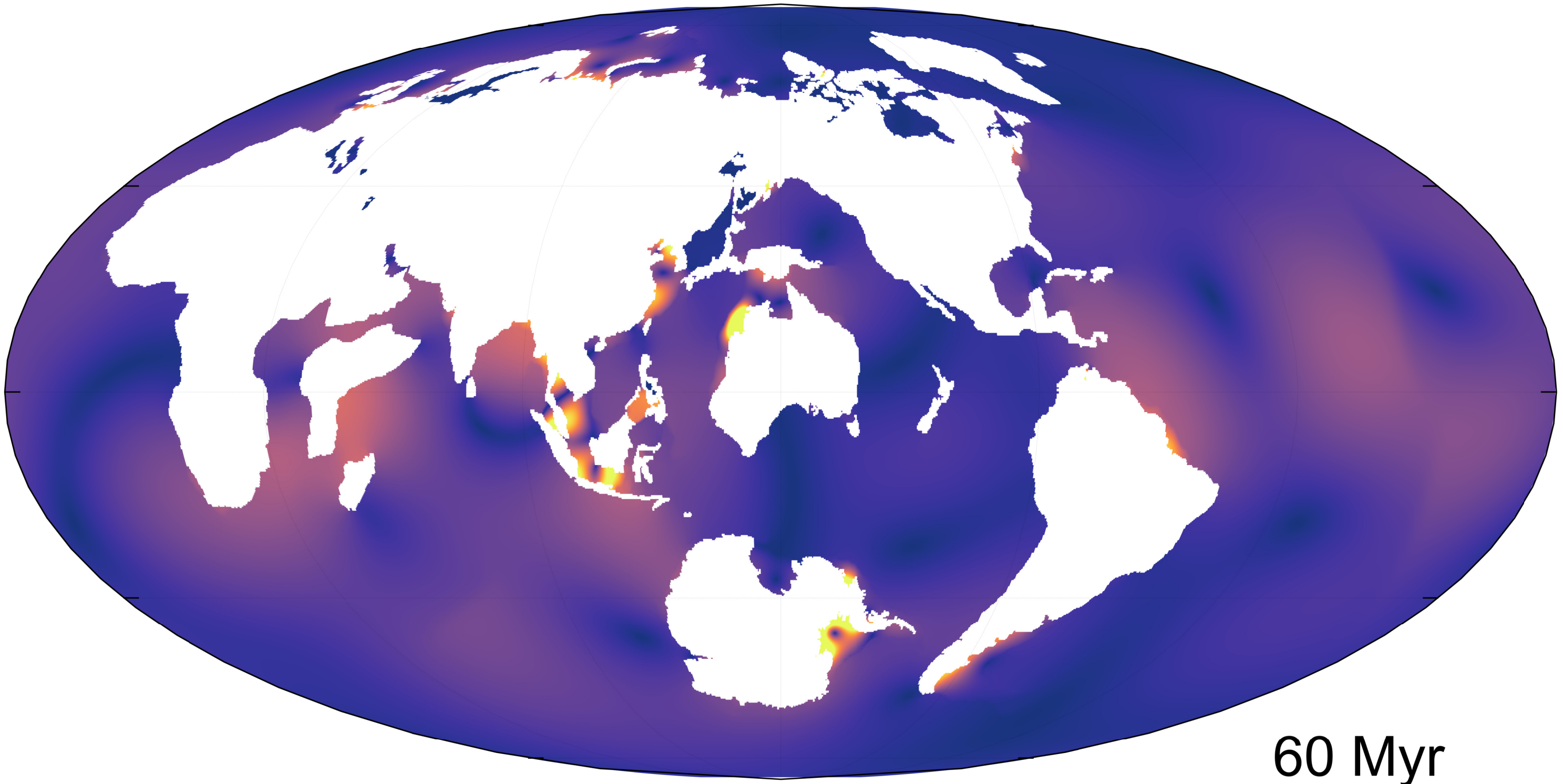
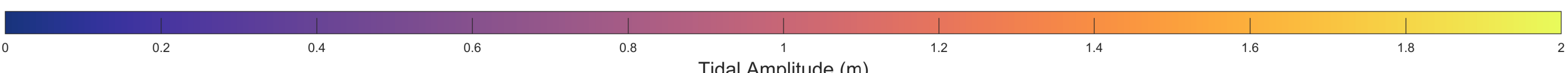


Figure S2c: Global M2 amplitudes for the (40 Myr) timeslice of the Novopangea scenario. The colour scale saturates at 2 m.

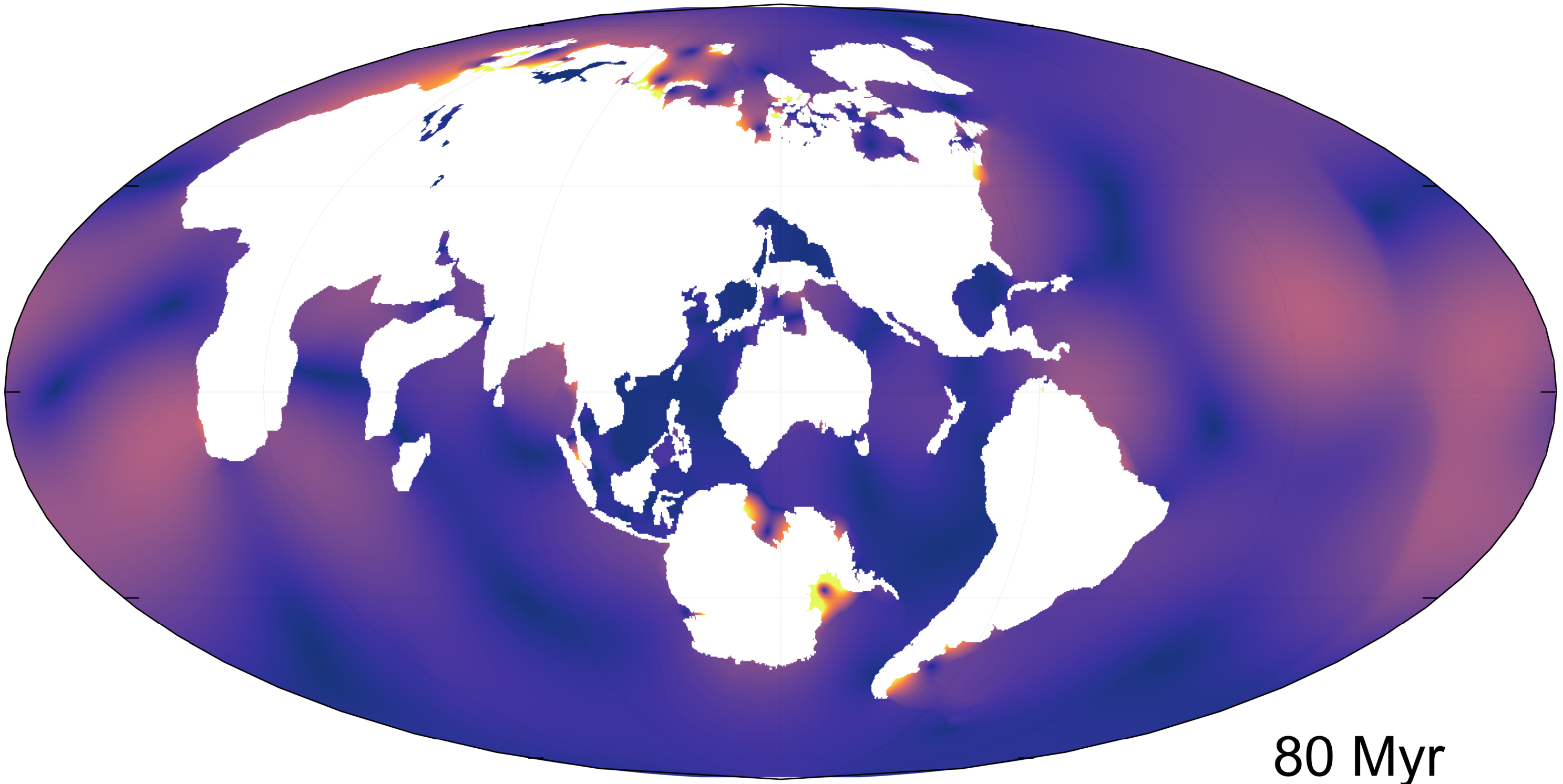


60 Myr

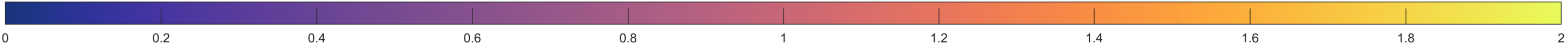


Tidal Amplitude (m)

Figure S2d: Global M2 amplitudes for the (60 Myr) timeslice of the Novopangea scenario. The colour scale saturates at 2 m.



80 Myr



Tidal Amplitude (m)

Figure S2e: Global M2 amplitudes for the (80 Myr) timeslice of the Novopangea scenario. The colour scale saturates at 2 m.

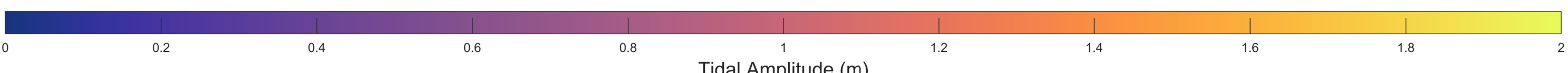
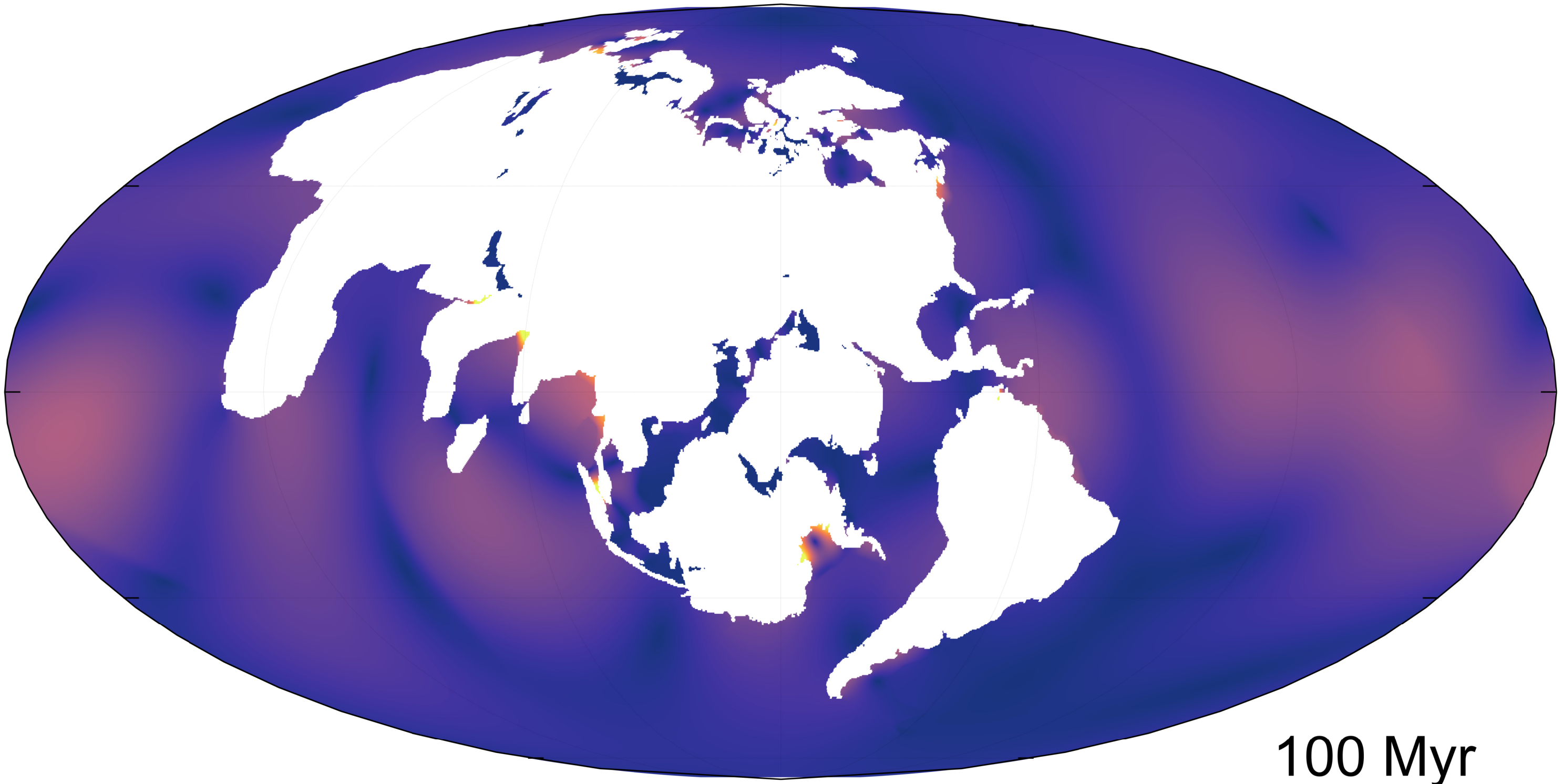
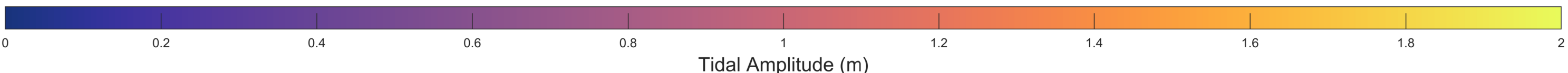


Figure S2f: Global M2 amplitudes for the (100 Myr) timeslice of the Novopangea scenario. The colour scale saturates at 2 m.



120 Myr



Tidal Amplitude (m)

Figure S2g: Global M2 amplitudes for the (120 Myr) timeslice of the Novopangea scenario. The colour scale saturates at 2 m.

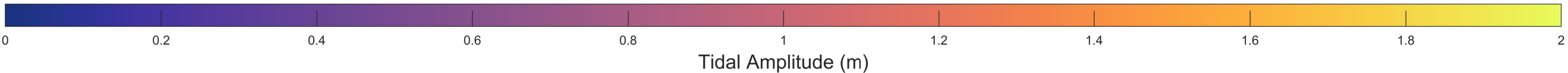
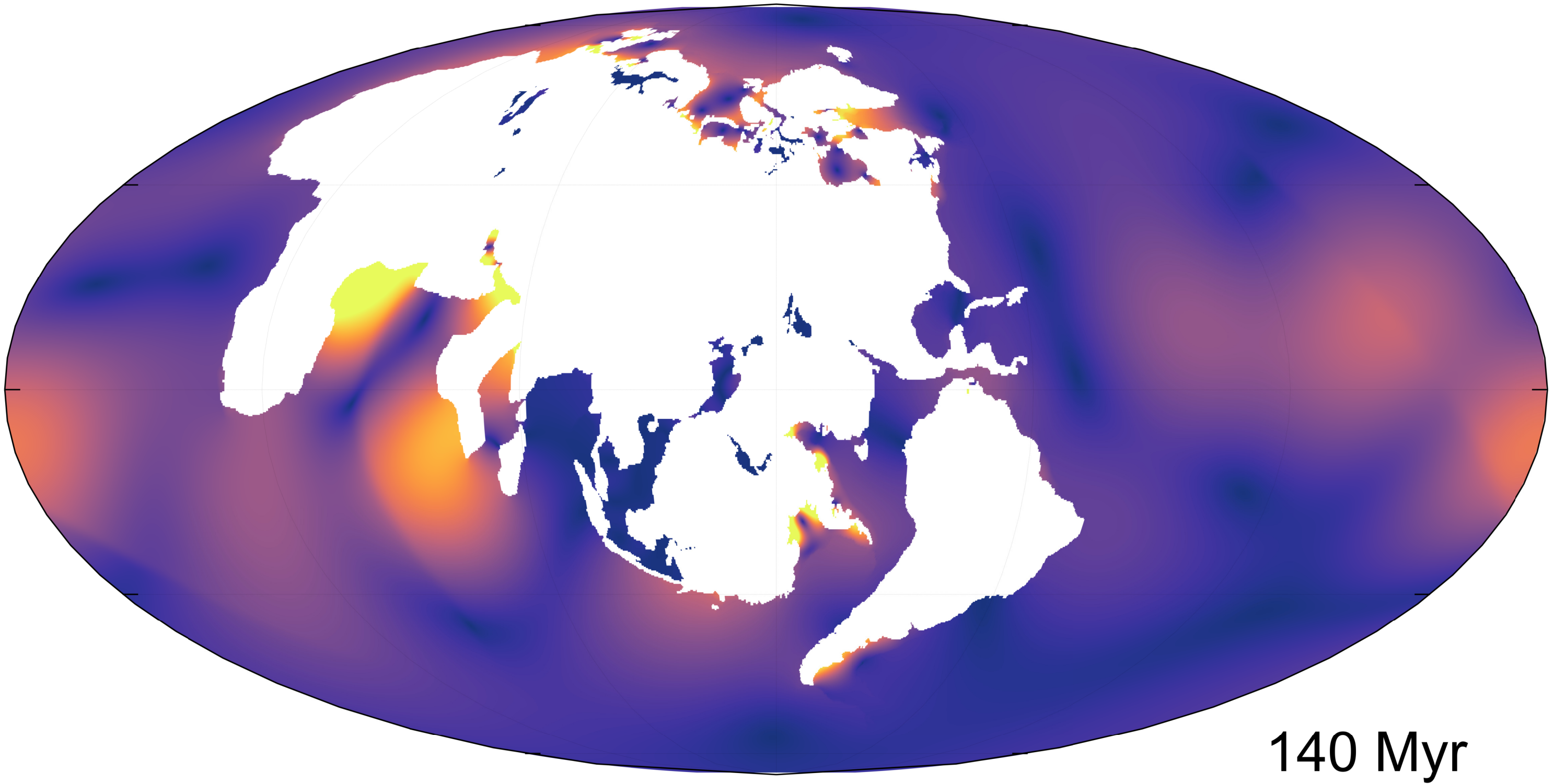
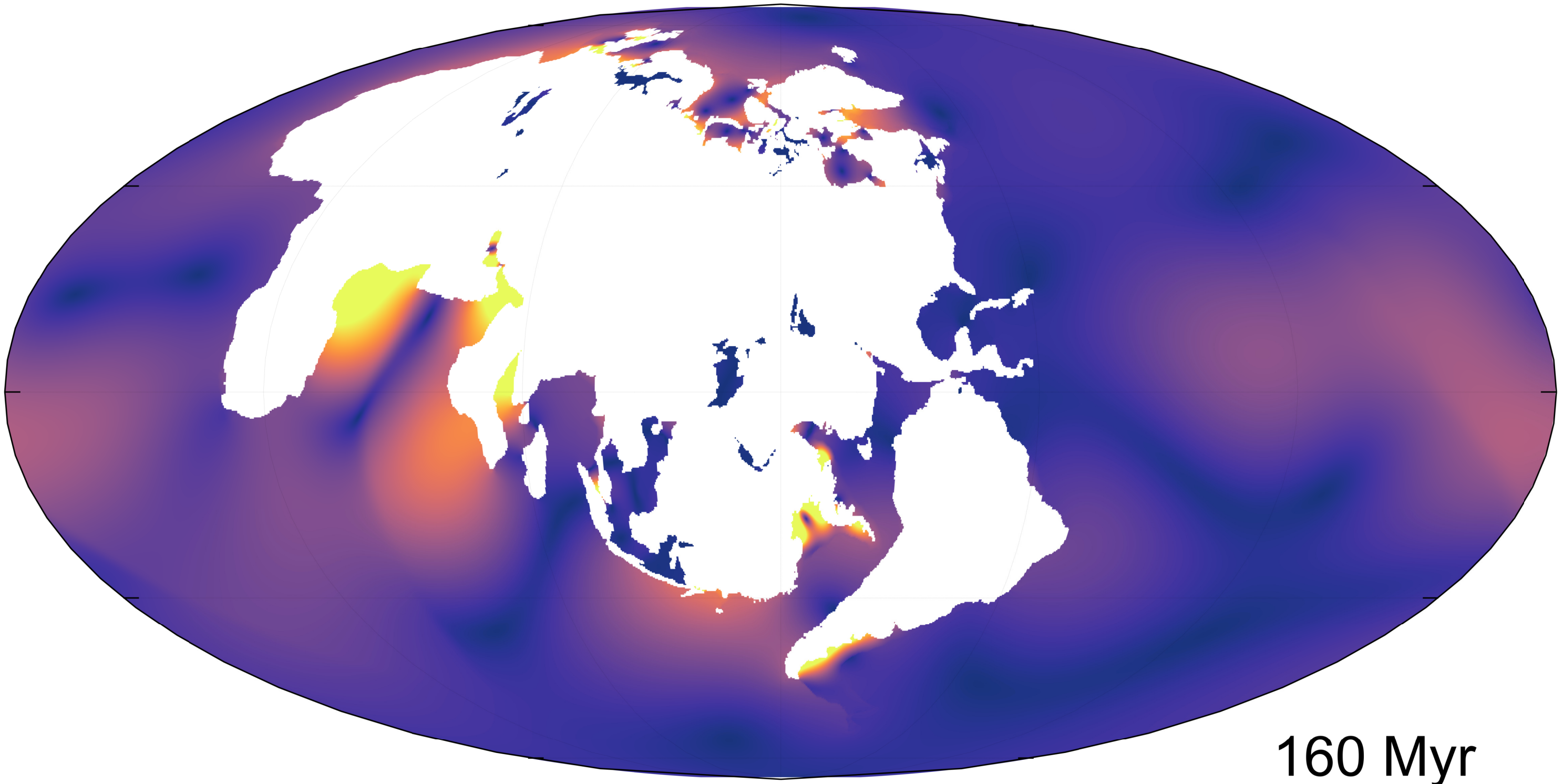
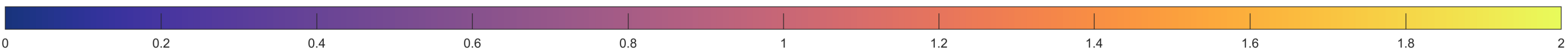


Figure S2h: Global M2 amplitudes for the (140 Myr) timeslice of the Novopangea scenario. The colour scale saturates at 2 m.



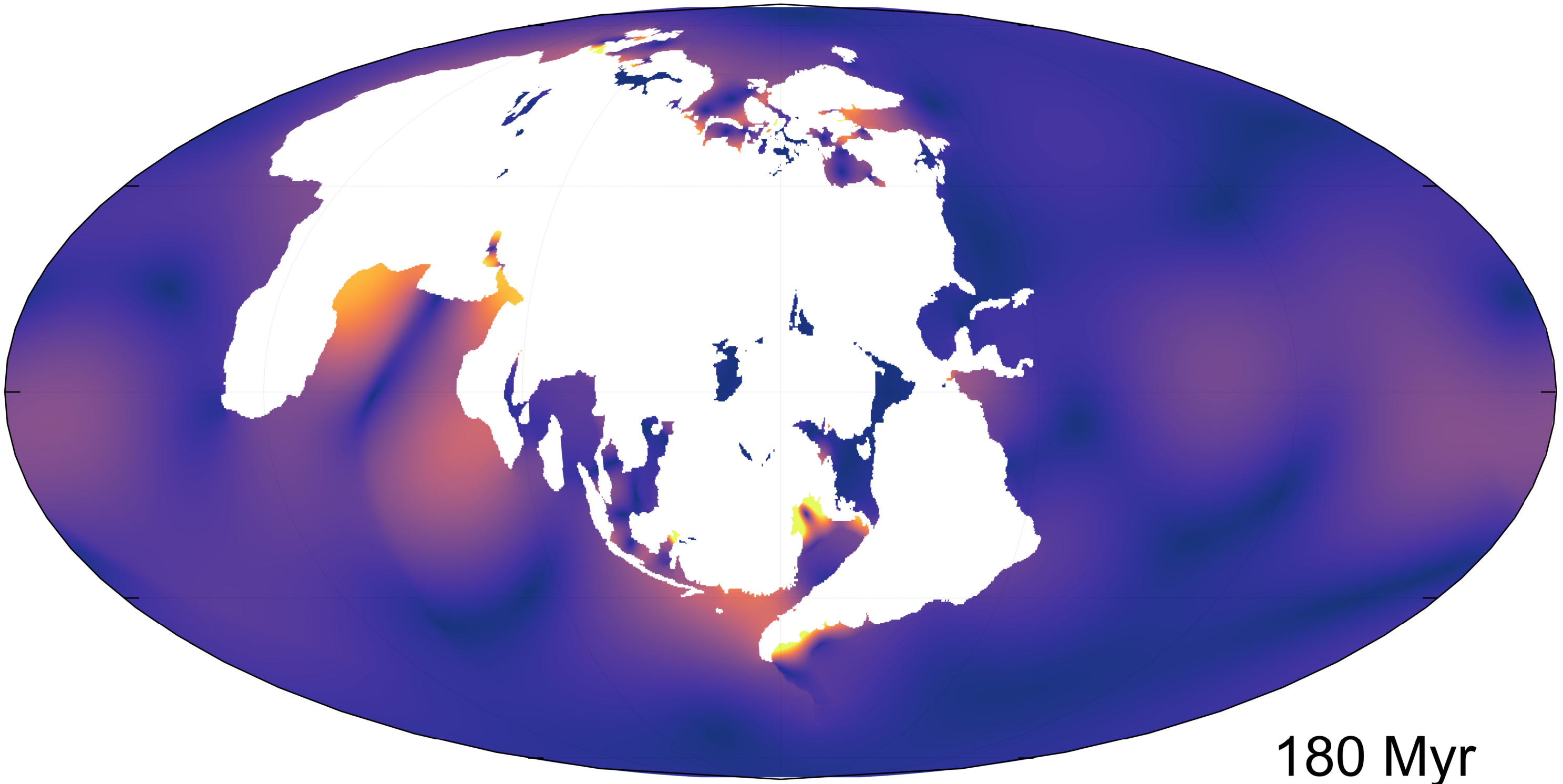


160 Myr

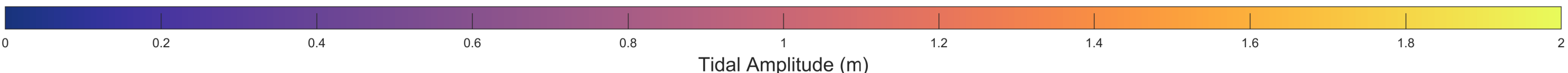


Tidal Amplitude (m)

Figure S2i: Global M2 amplitudes for the (160 Myr) timeslice of the Novopangea scenario. The colour scale saturates at 2 m.



180 Myr



Tidal Amplitude (m)

Figure S2j: Global M2 amplitudes for the (180 Myr) timeslice of the Novopangea scenario. The colour scale saturates at 2 m.

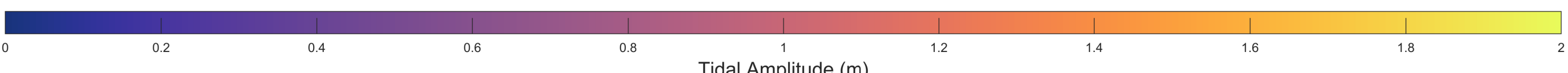
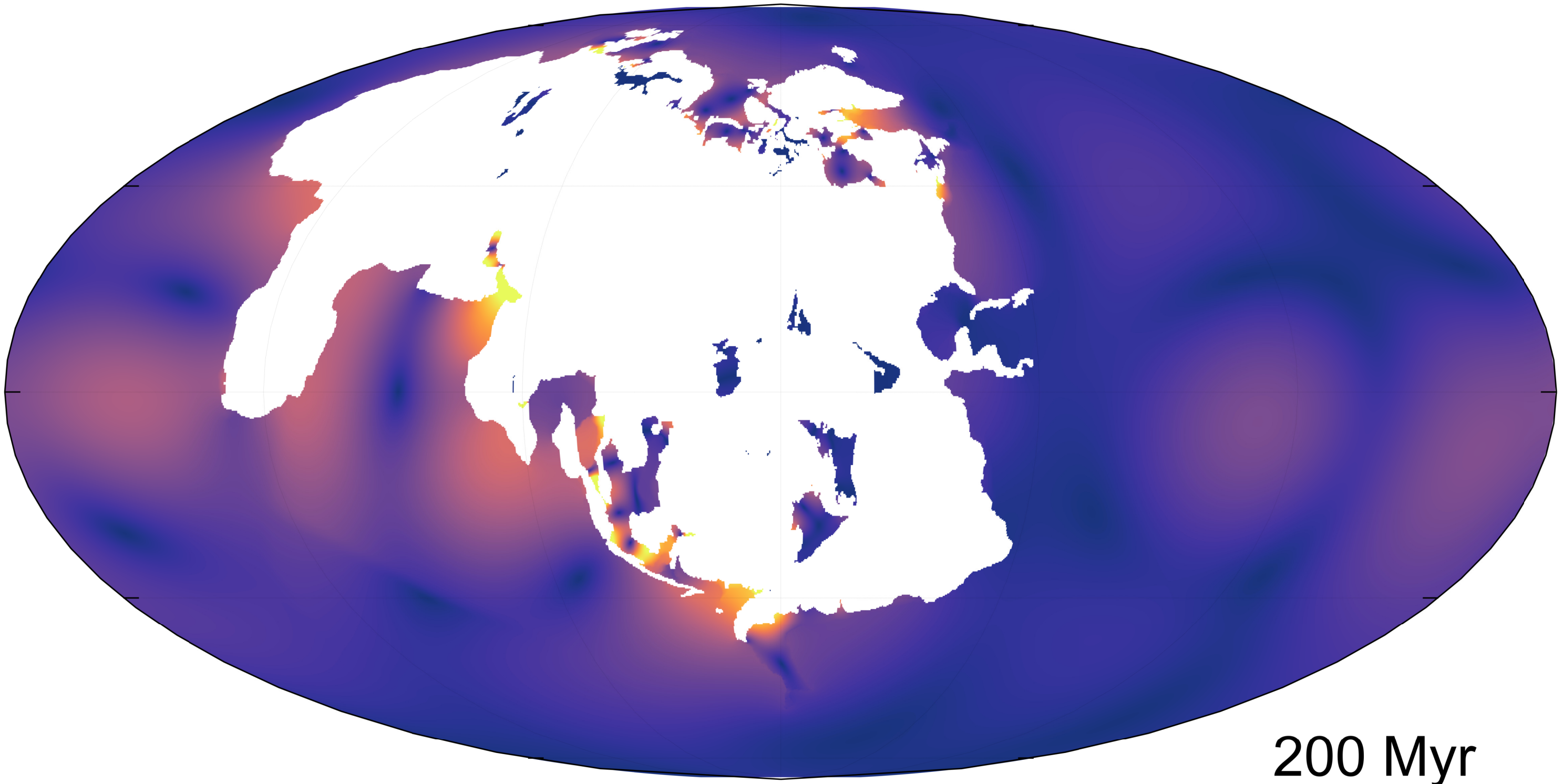


Figure S2k: Global M2 amplitudes for the (200 Myr) timeslice of the Novopangea scenario. The colour scale saturates at 2 m.

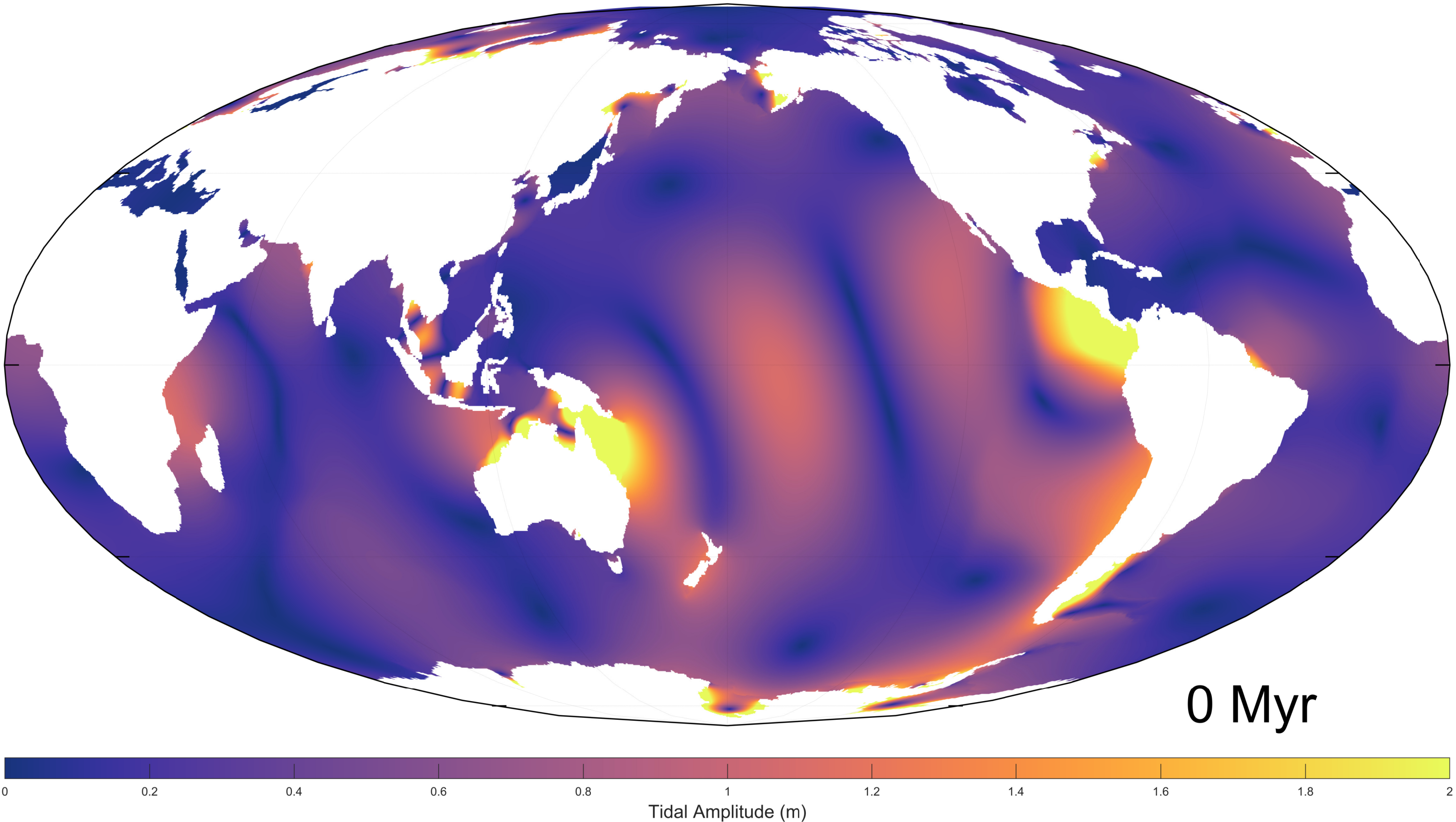


Figure S3a: Global M2 amplitudes for the (0 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.

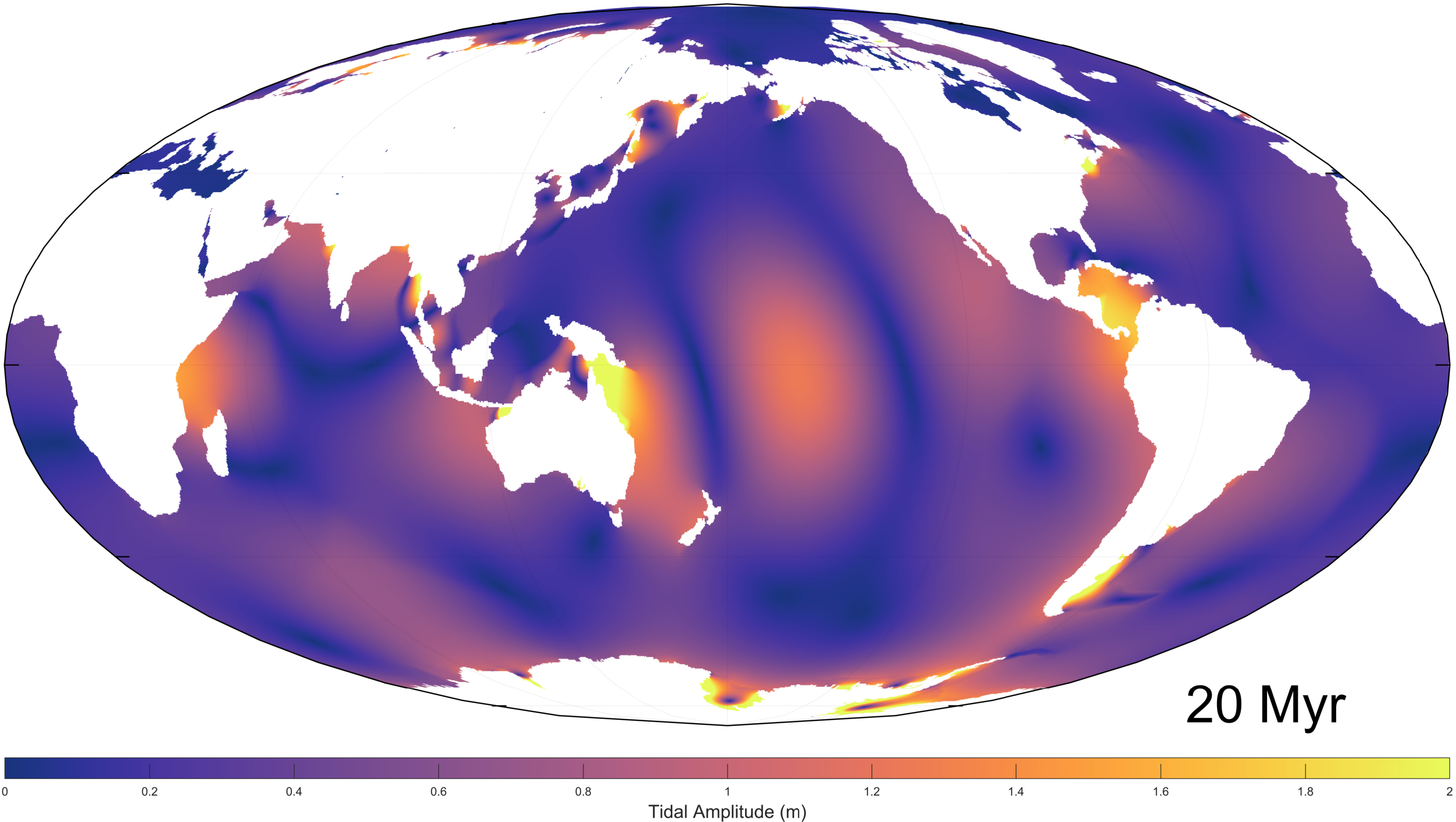


Figure S3b: Global M2 amplitudes for the (20 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.

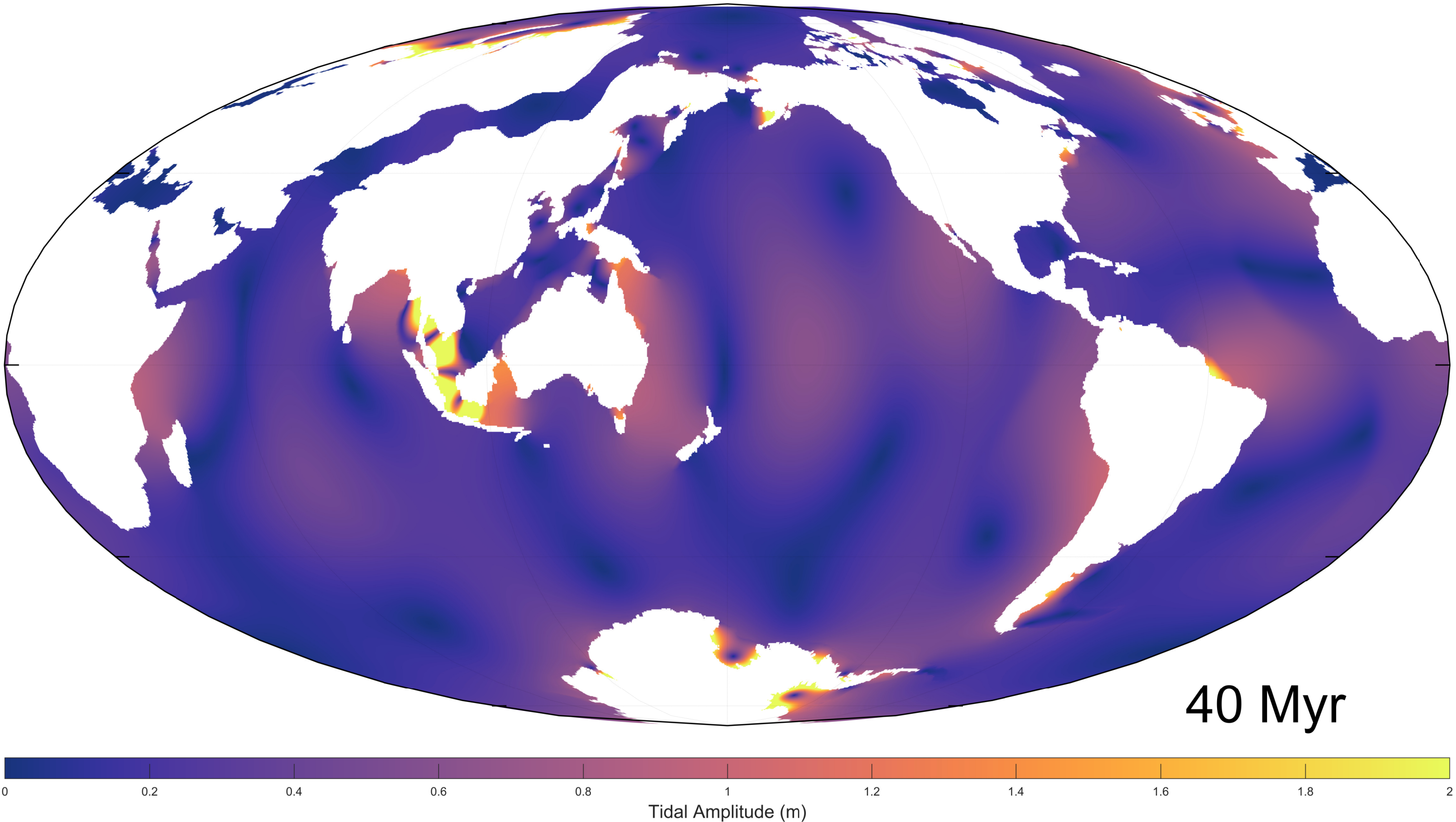


Figure S3c: Global M2 amplitudes for the (40 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.

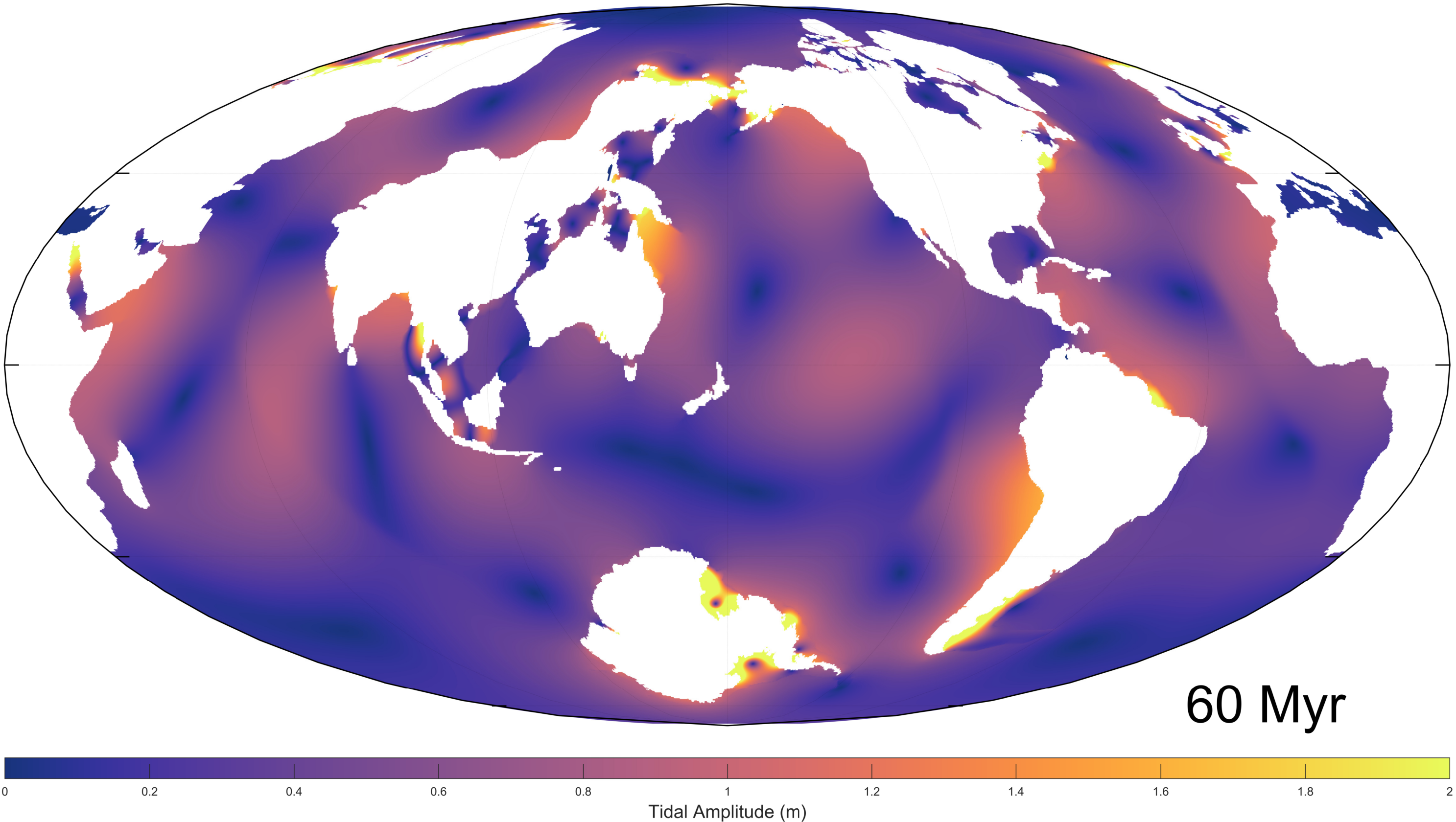


Figure S3d: Global M2 amplitudes for the (60 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.

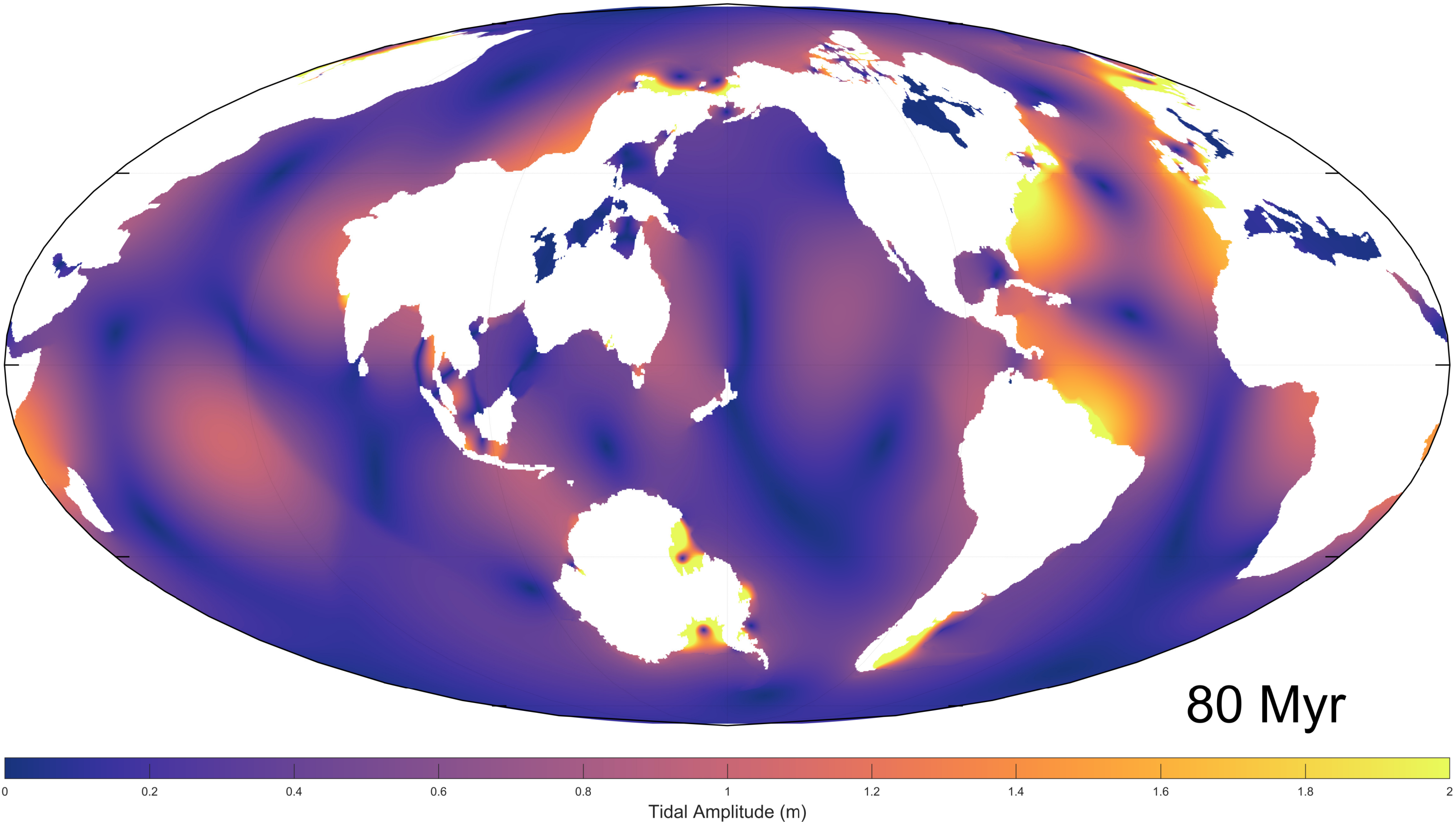


Figure S3e: Global M2 amplitudes for the (80 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.



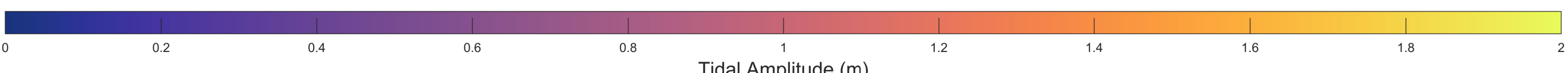
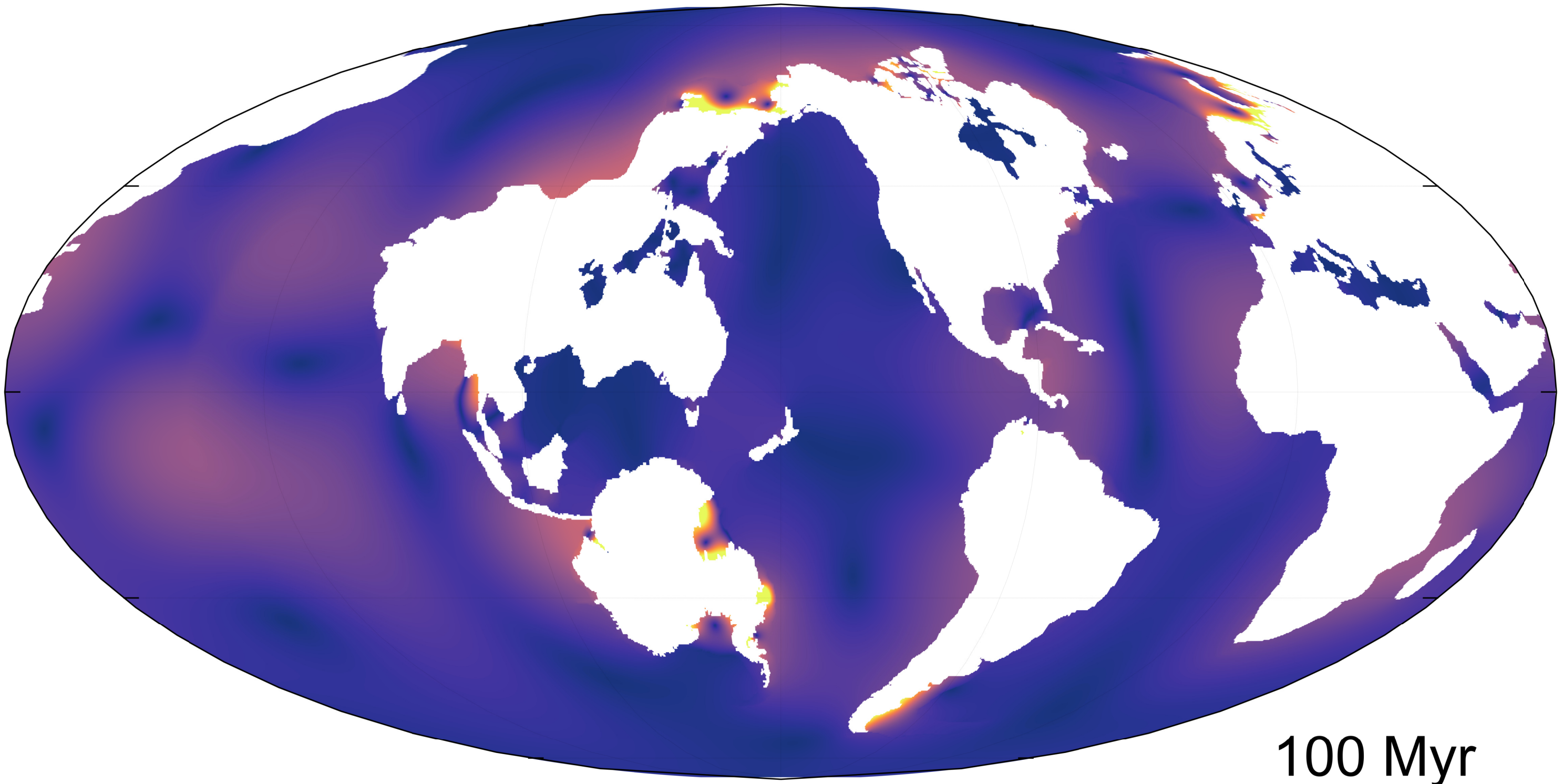
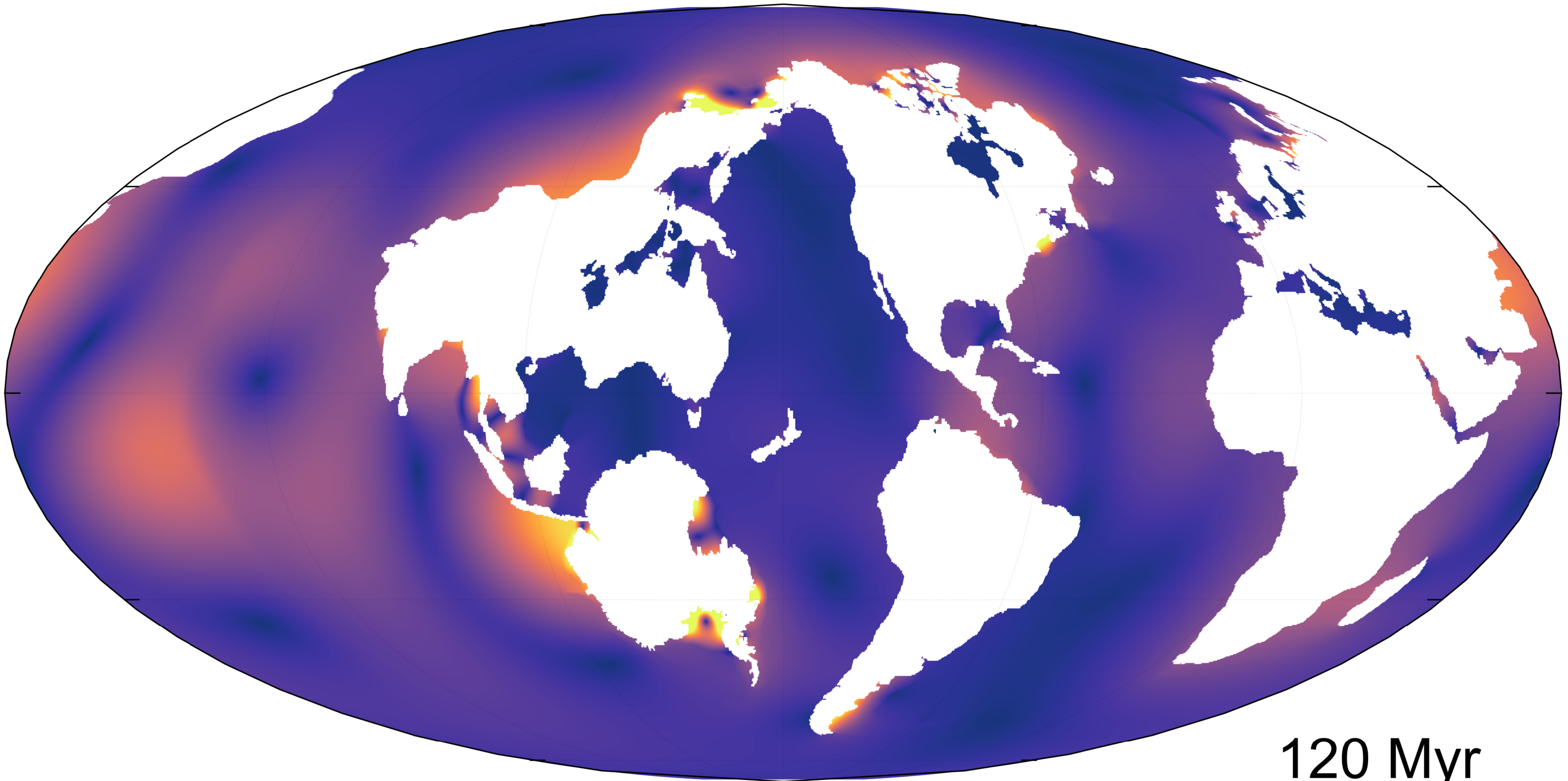
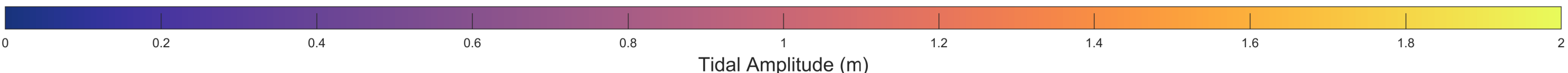


Figure S3f: Global M2 amplitudes for the (100 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.

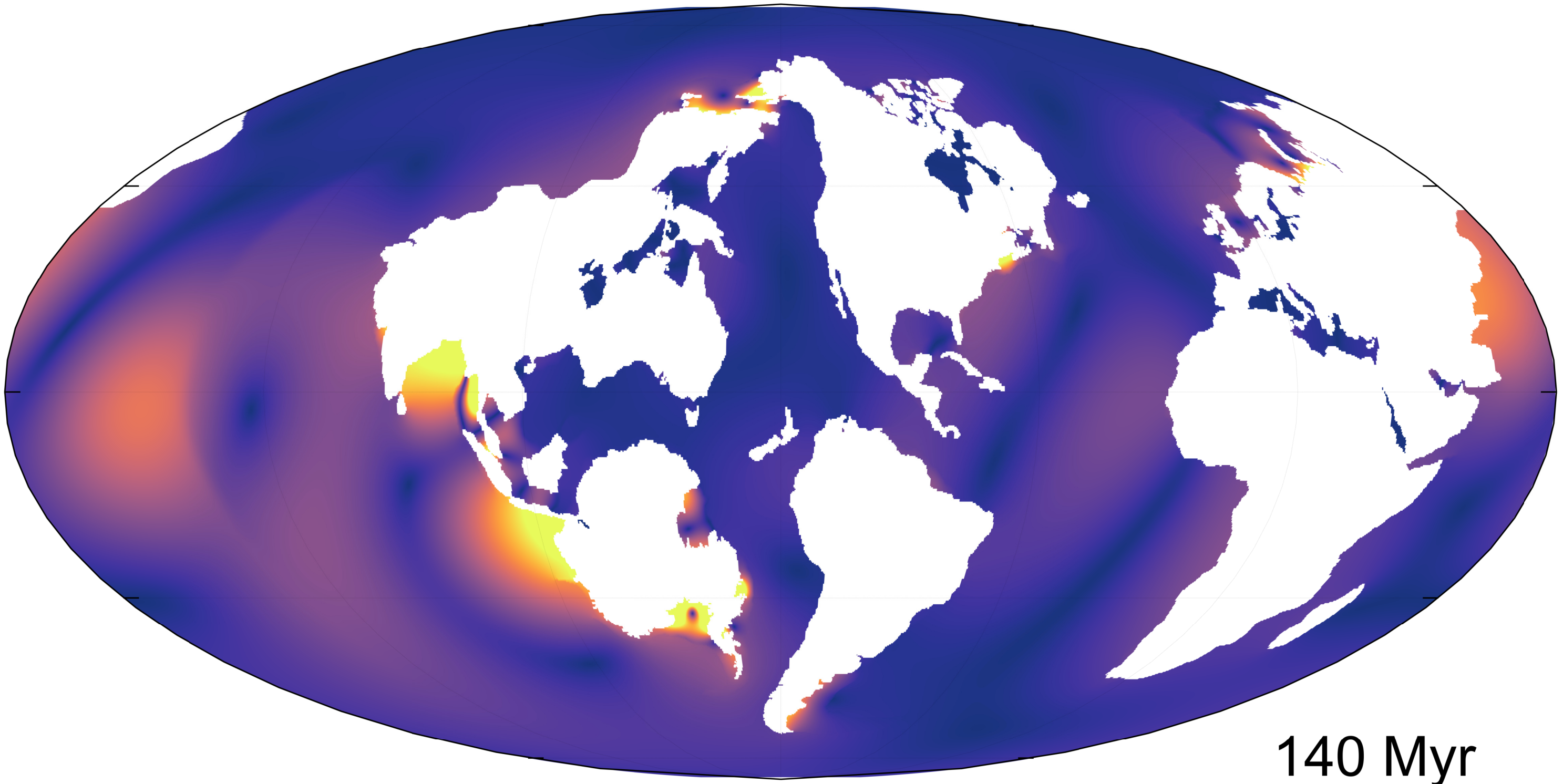


120 Myr

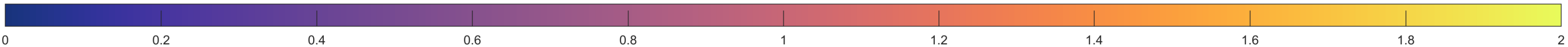


Tidal Amplitude (m)

Figure S3g: Global M2 amplitudes for the (120 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.



140 Myr



Tidal Amplitude (m)

Figure S3h: Global M2 amplitudes for the (140 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.

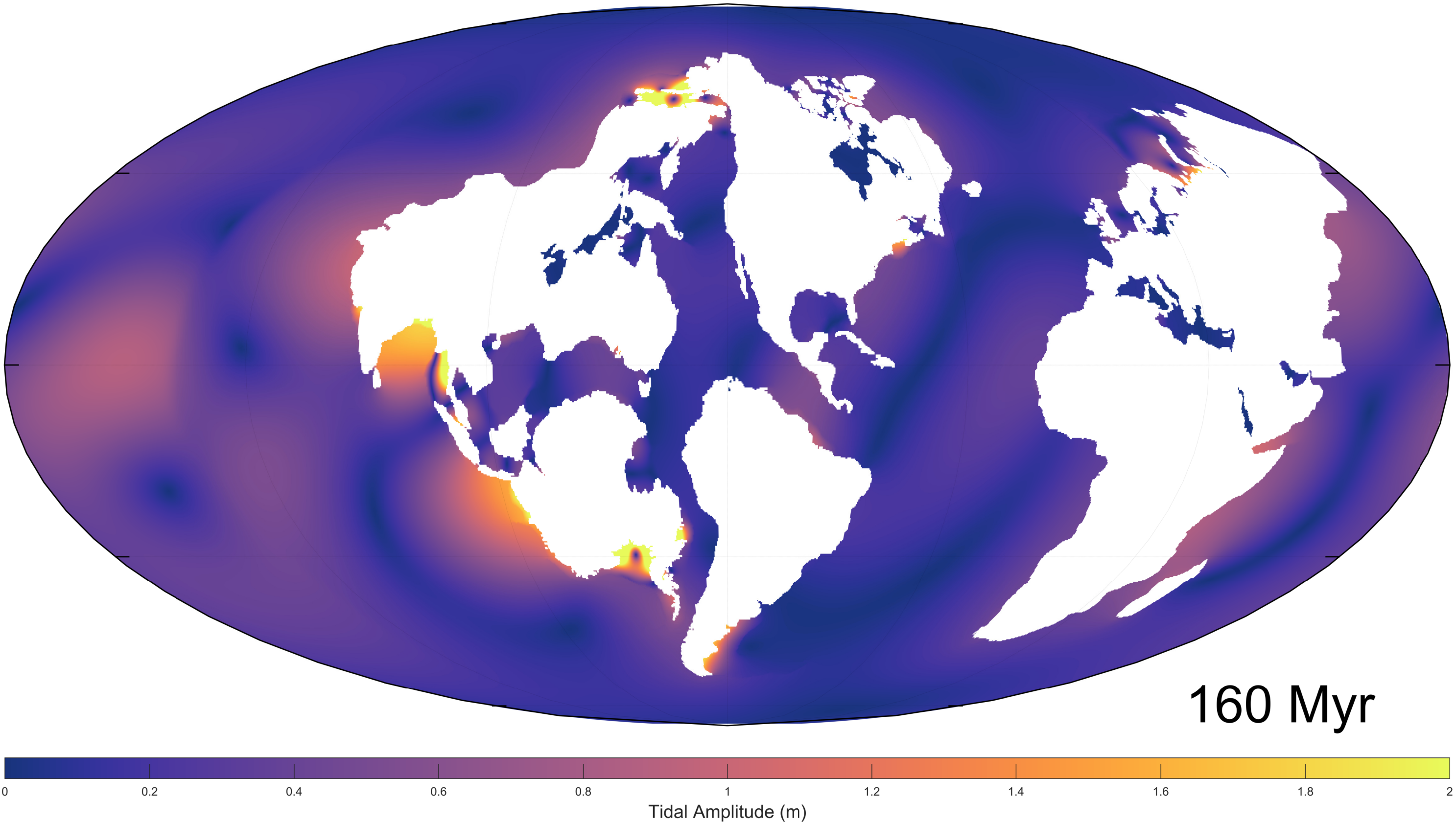


Figure S3i: Global M2 amplitudes for the (160 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.

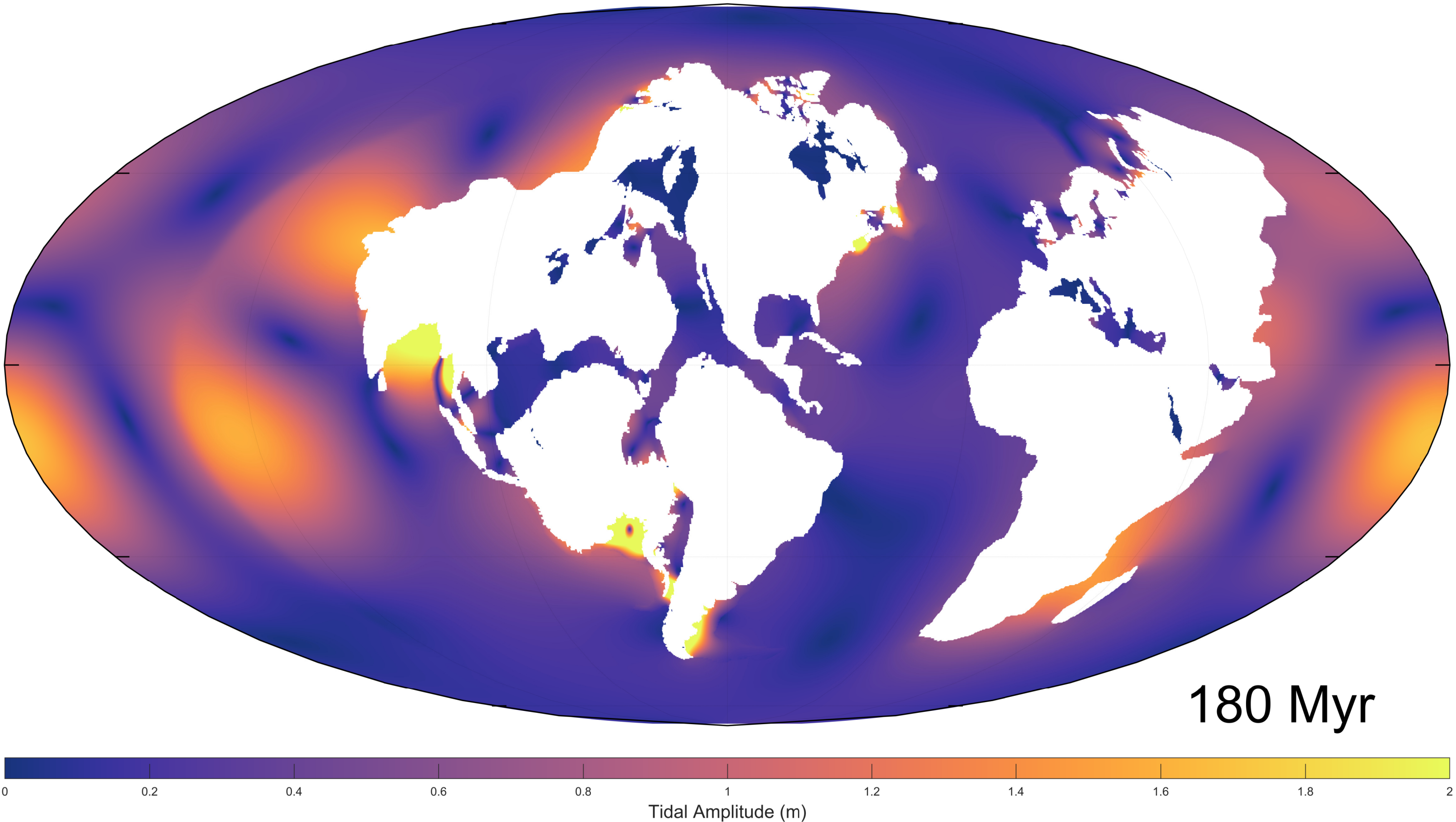
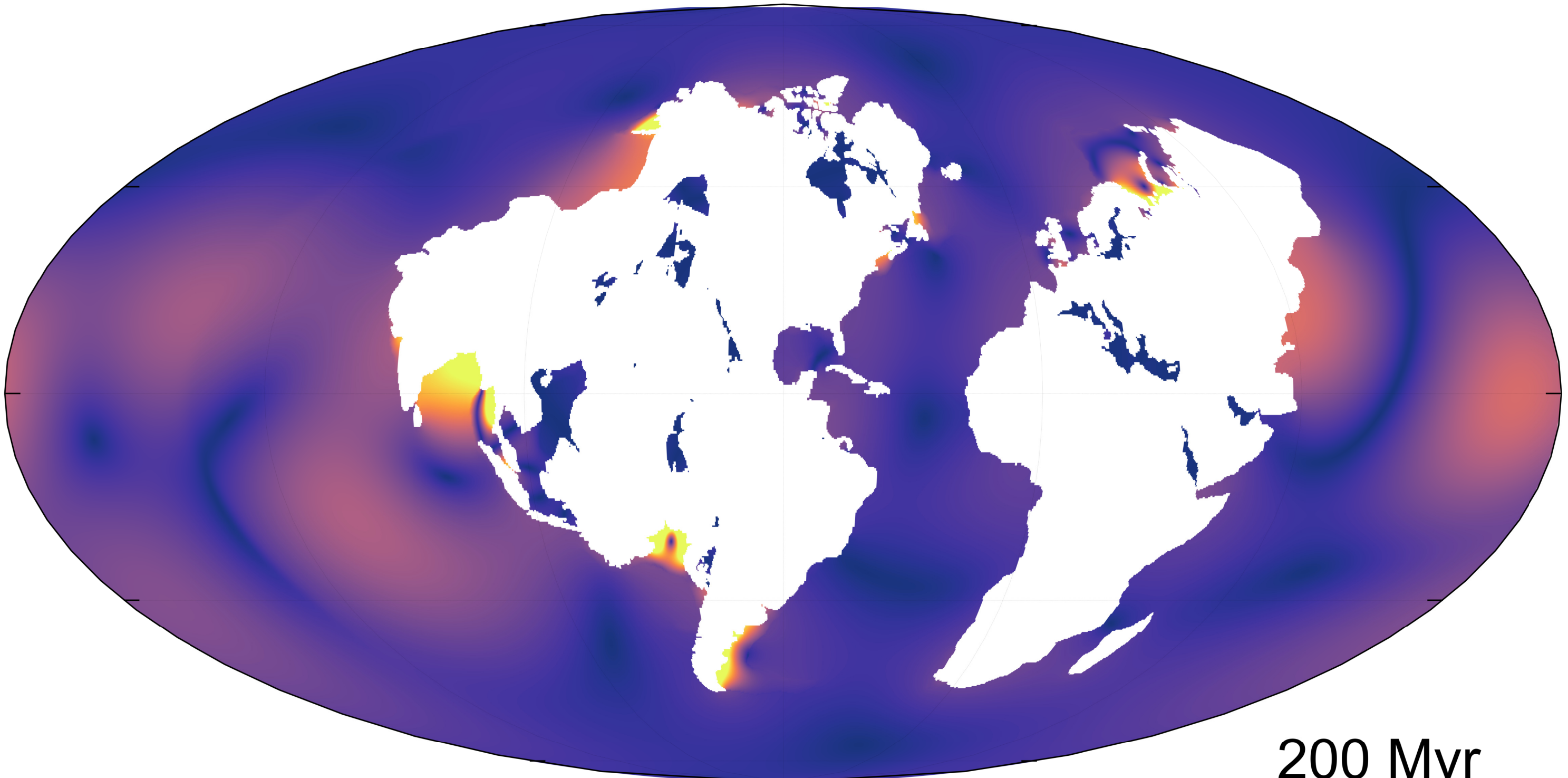
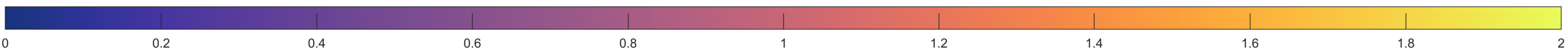


Figure S3j: Global M2 amplitudes for the (180 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.

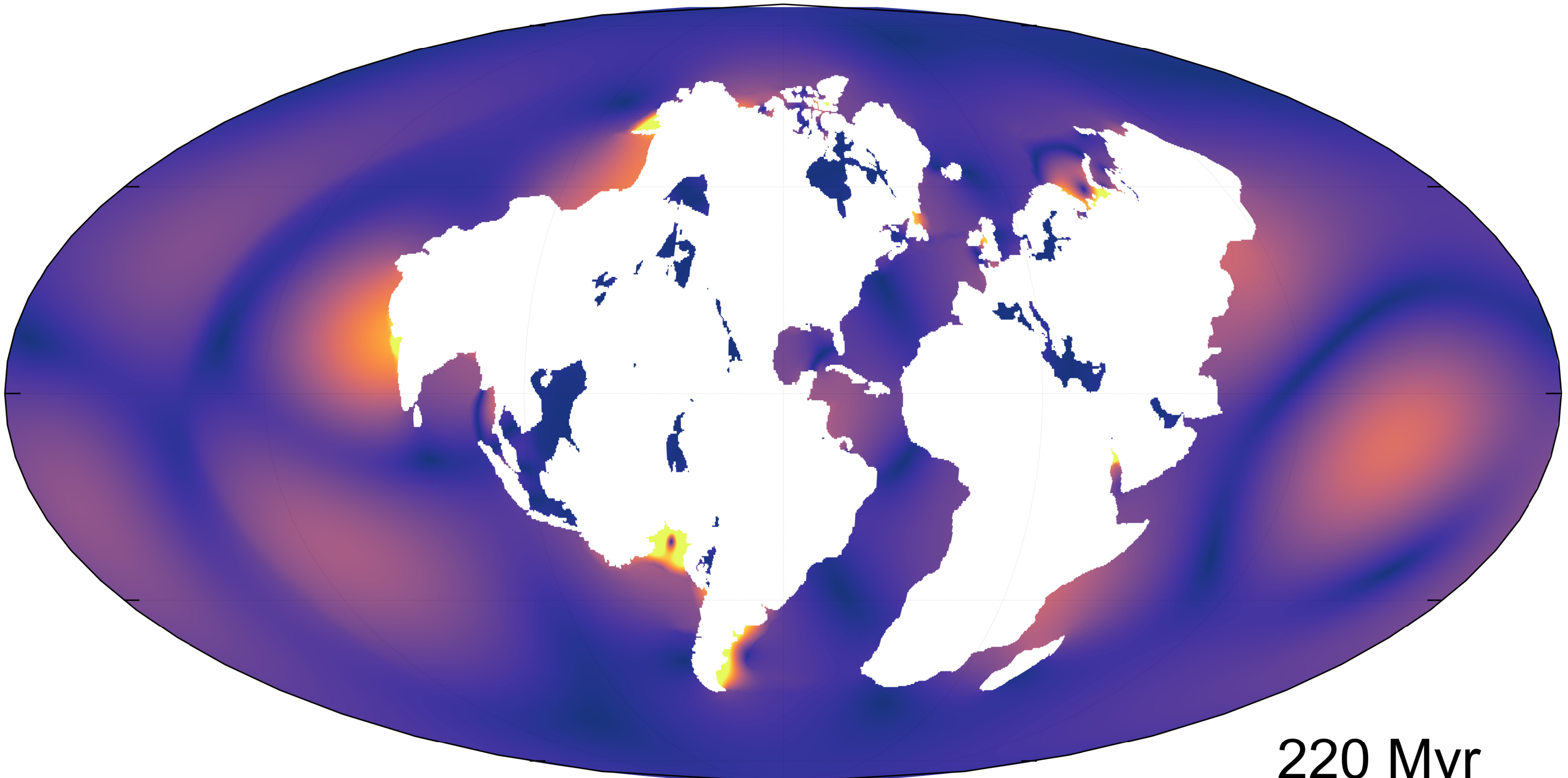


200 Myr

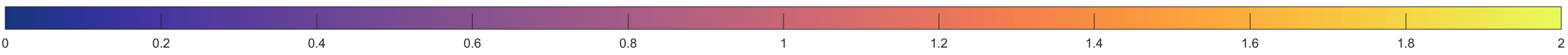


Tidal Amplitude (m)

Figure S3k: Global M2 amplitudes for the (200 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.

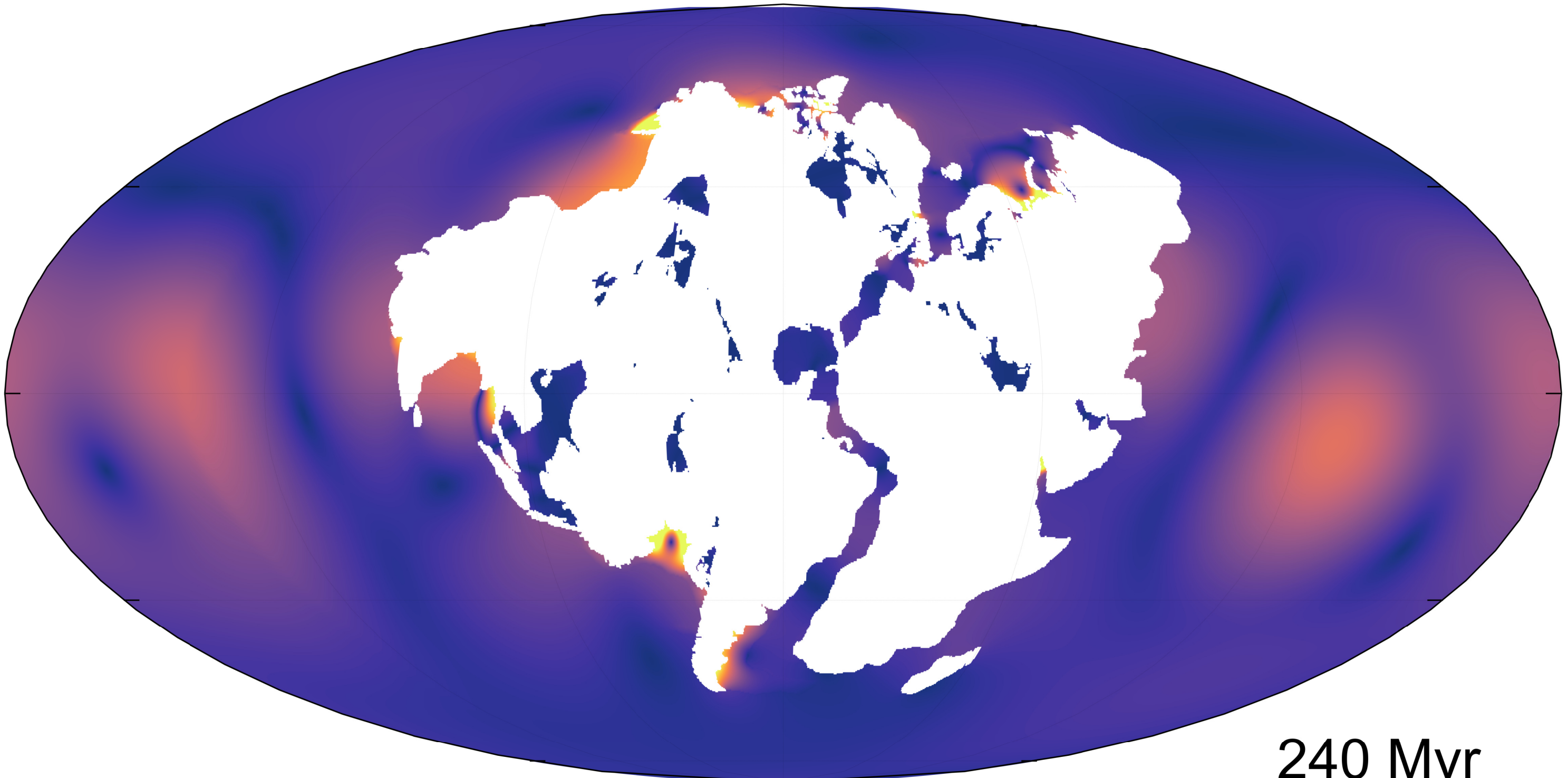


220 Myr

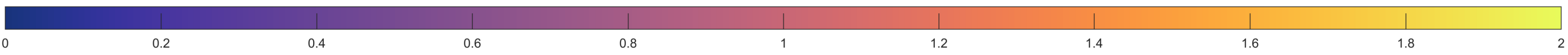


Tidal Amplitude (m)

Figure S3I: Global M2 amplitudes for the (220 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.



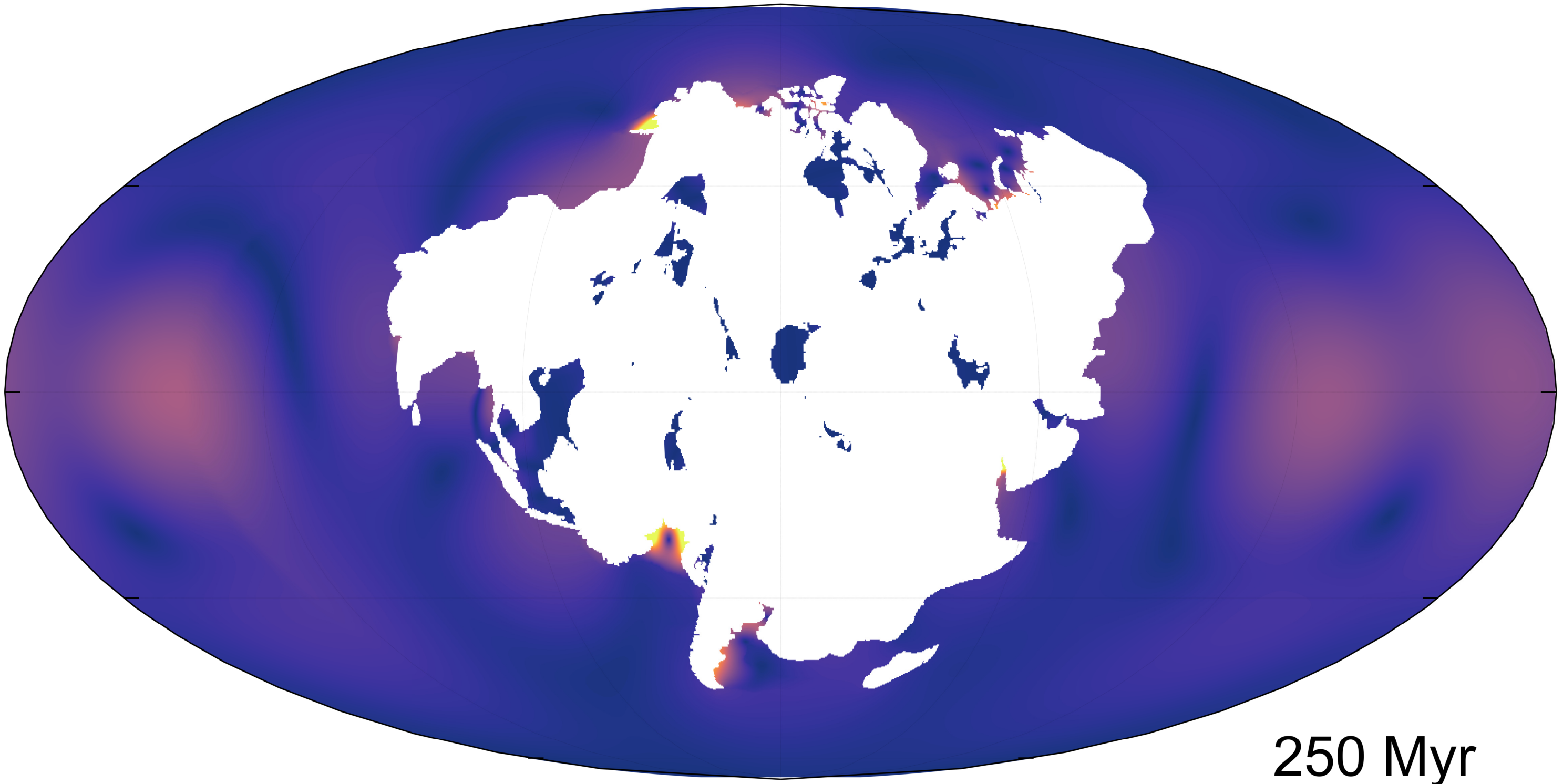
240 Myr



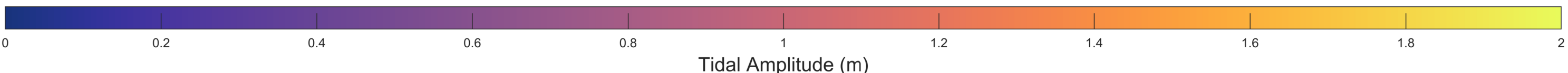
Tidal Amplitude (m)

Figure S3m: Global M2 amplitudes for the (240 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.





250 Myr



Tidal Amplitude (m)

Figure S3n: Global M2 amplitudes for the (250 Myr) timeslice of the Aurica scenario. The colour scale saturates at 2 m.

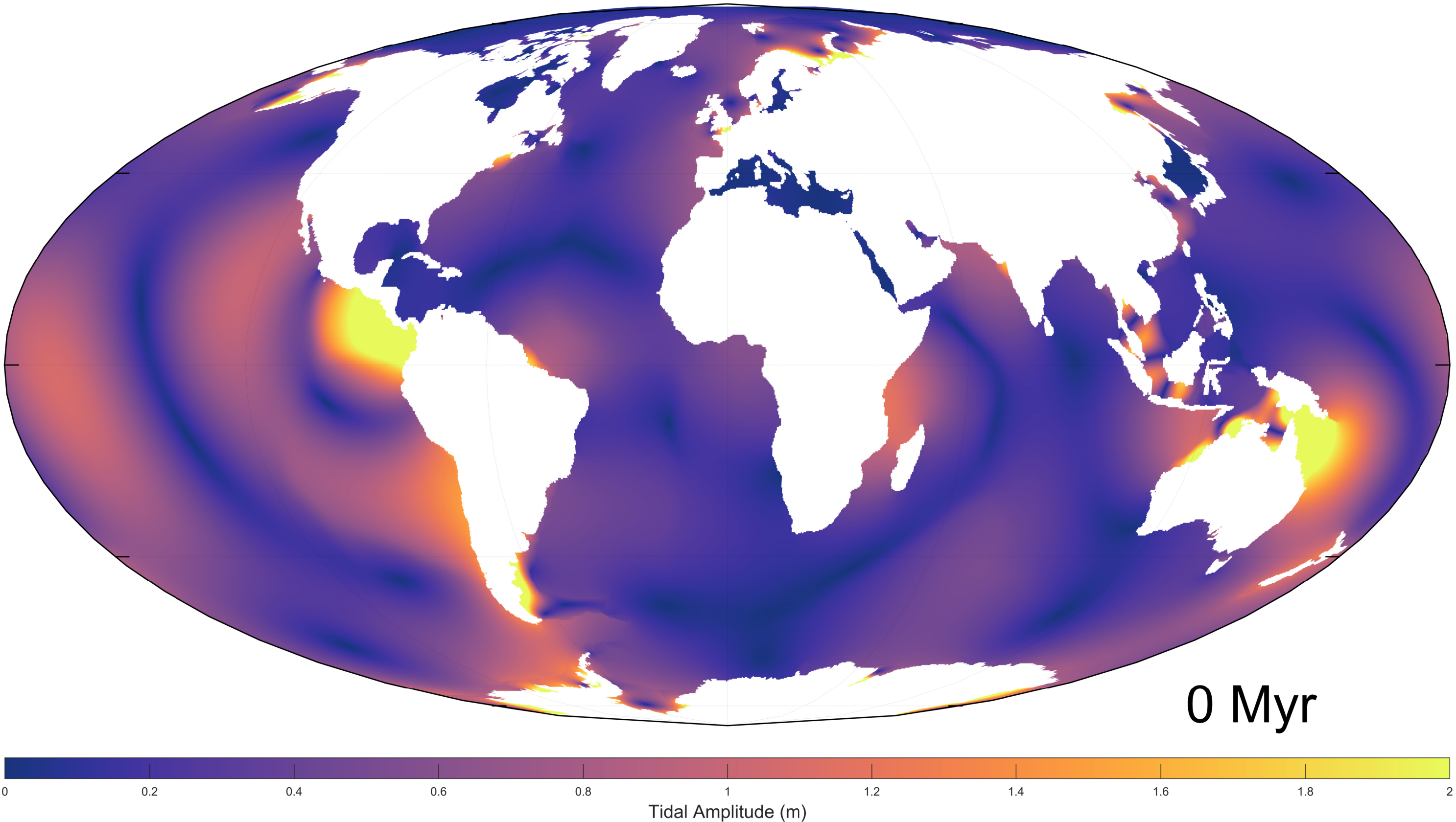
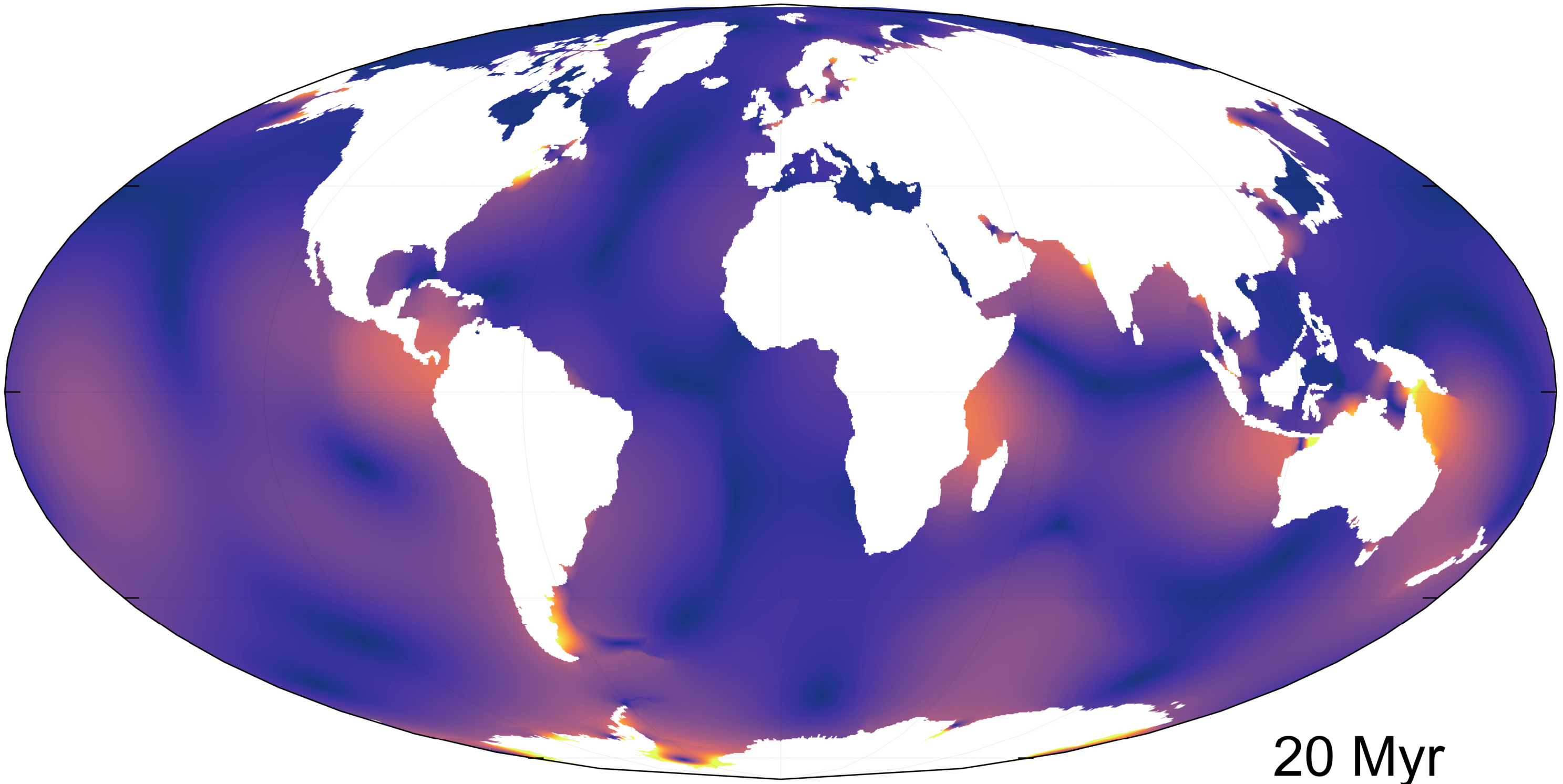
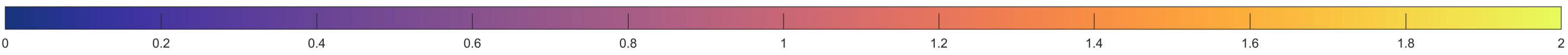


Figure S4a: Global M2 amplitudes for the (0 Myr) timeslice of the Amasia scenario. The colour scale saturates at 2 m.



20 Myr



Tidal Amplitude (m)

Figure S4b: Global M2 amplitudes for the (20 Myr) timeslice of the Amasia scenario. The colour scale saturates at 2 m.

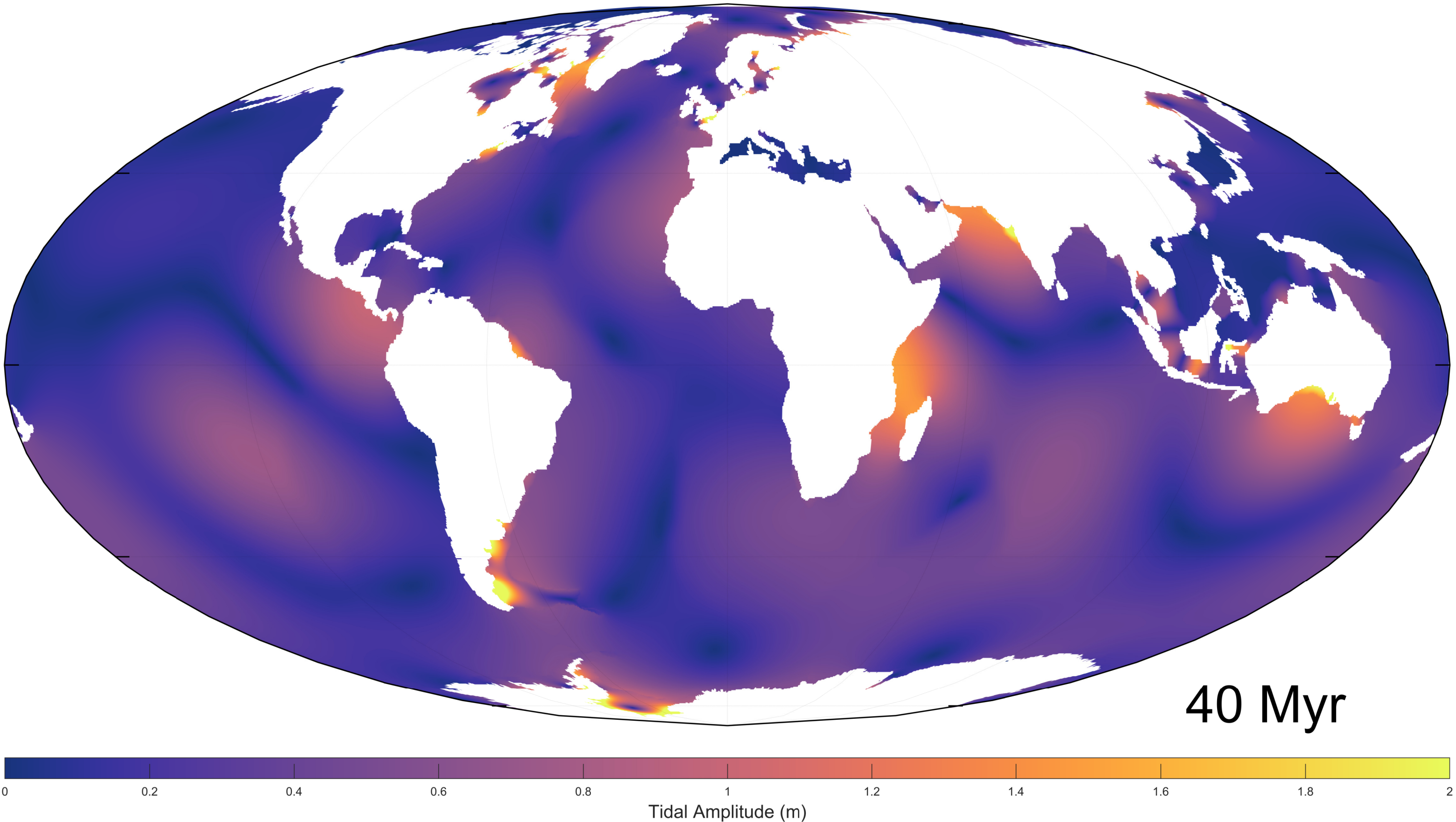


Figure S4c: Global M2 amplitudes for the (40 Myr) timeslice of the Amasia scenario. The colour scale saturates at 2 m.

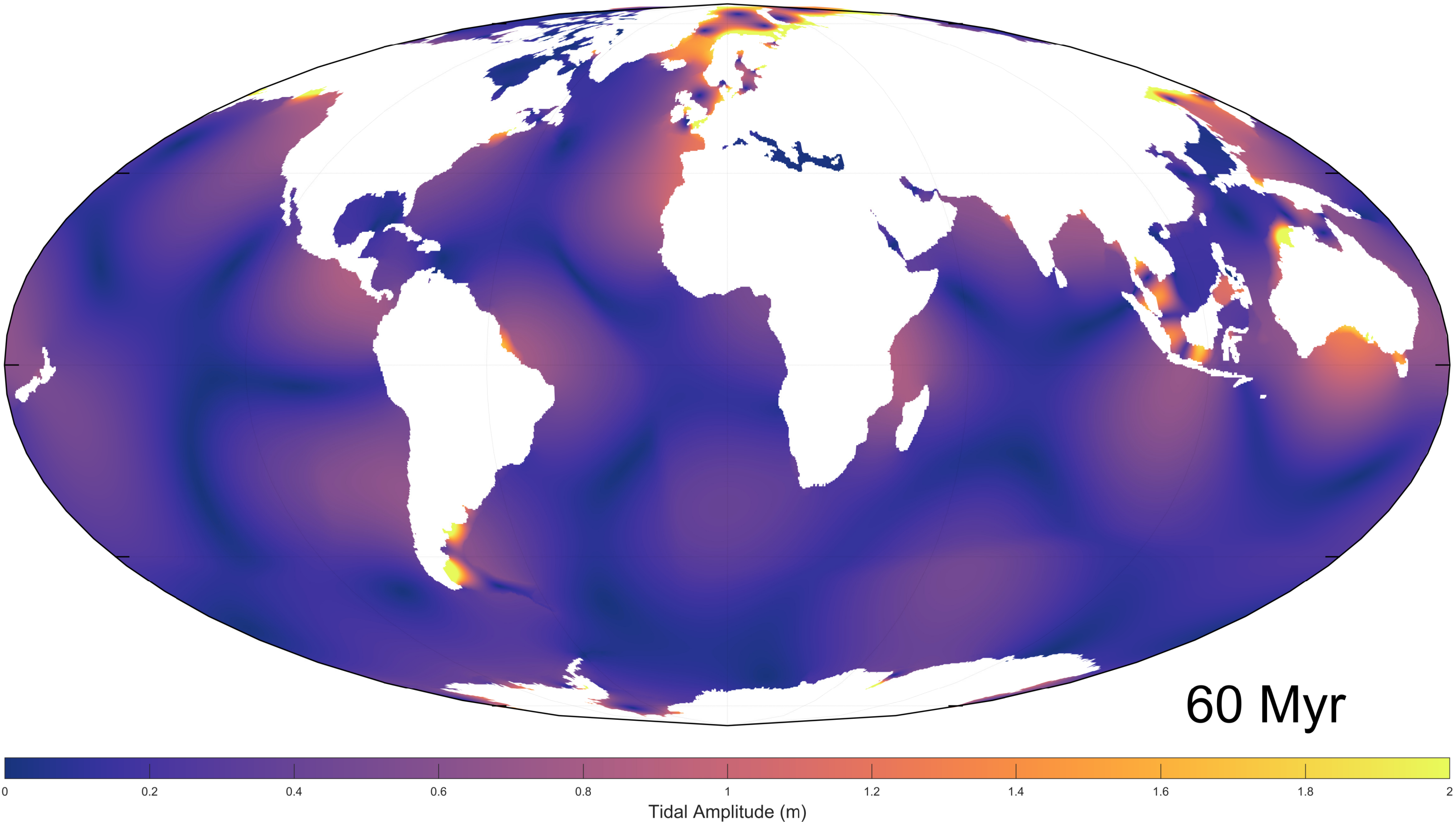
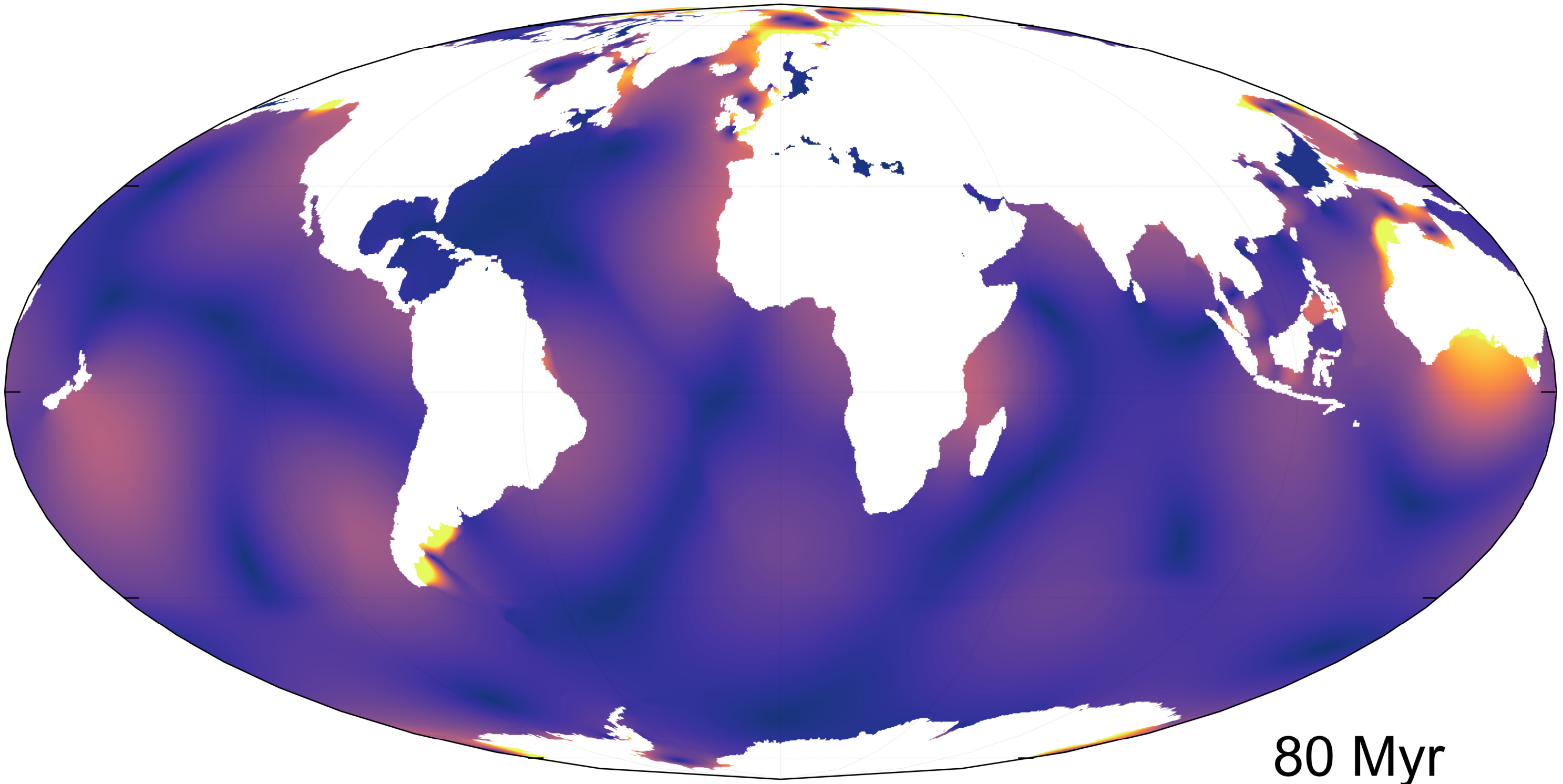
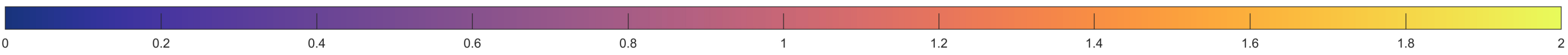


Figure S4d: Global M2 amplitudes for the (60 Myr) timeslice of the Amasia scenario. The colour scale saturates at 2 m.

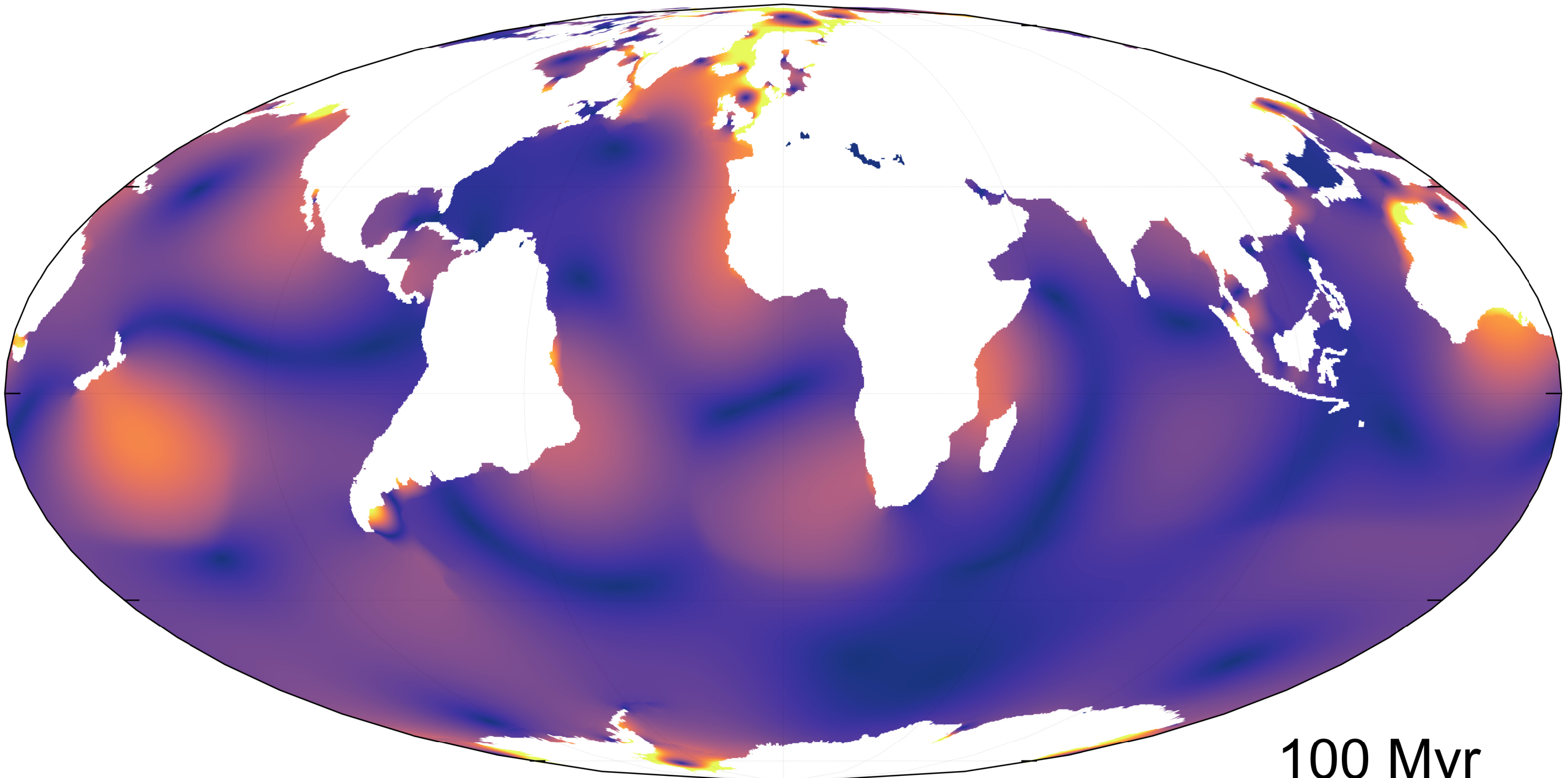


80 Myr

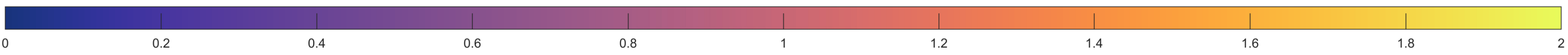


Tidal Amplitude (m)

Figure S4e: Global M2 amplitudes for the (80 Myr) timeslice of the Amasia scenario. The colour scale saturates at 2 m.



100 Myr



Tidal Amplitude (m)

Figure S4f: Global M2 amplitudes for the (100 Myr) timeslice of the Amasia scenario. The colour scale saturates at 2 m.

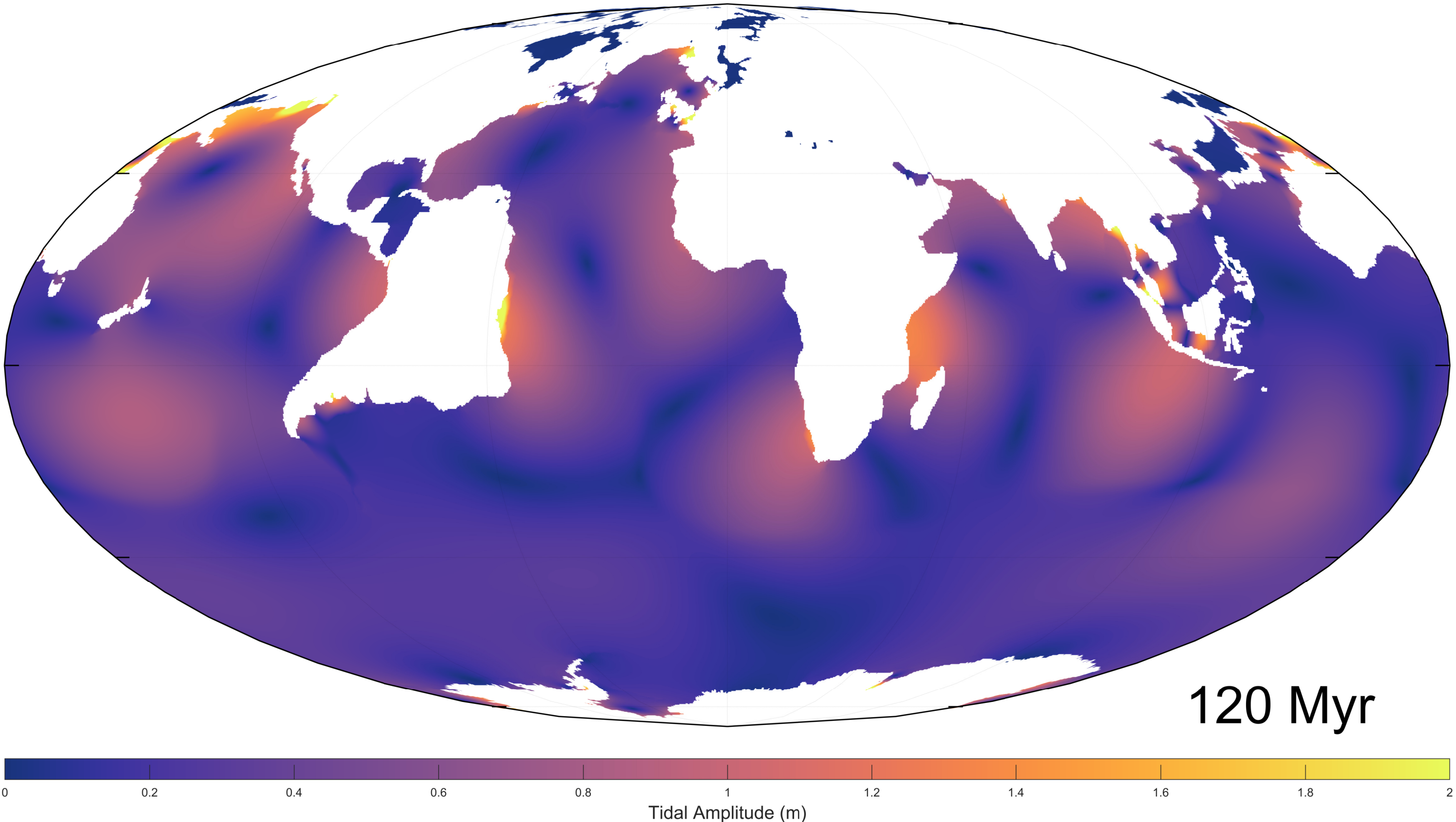


Figure S4g: Global M2 amplitudes for the (120 Myr) timeslice of the Amasia scenario. The colour scale saturates at 2 m.



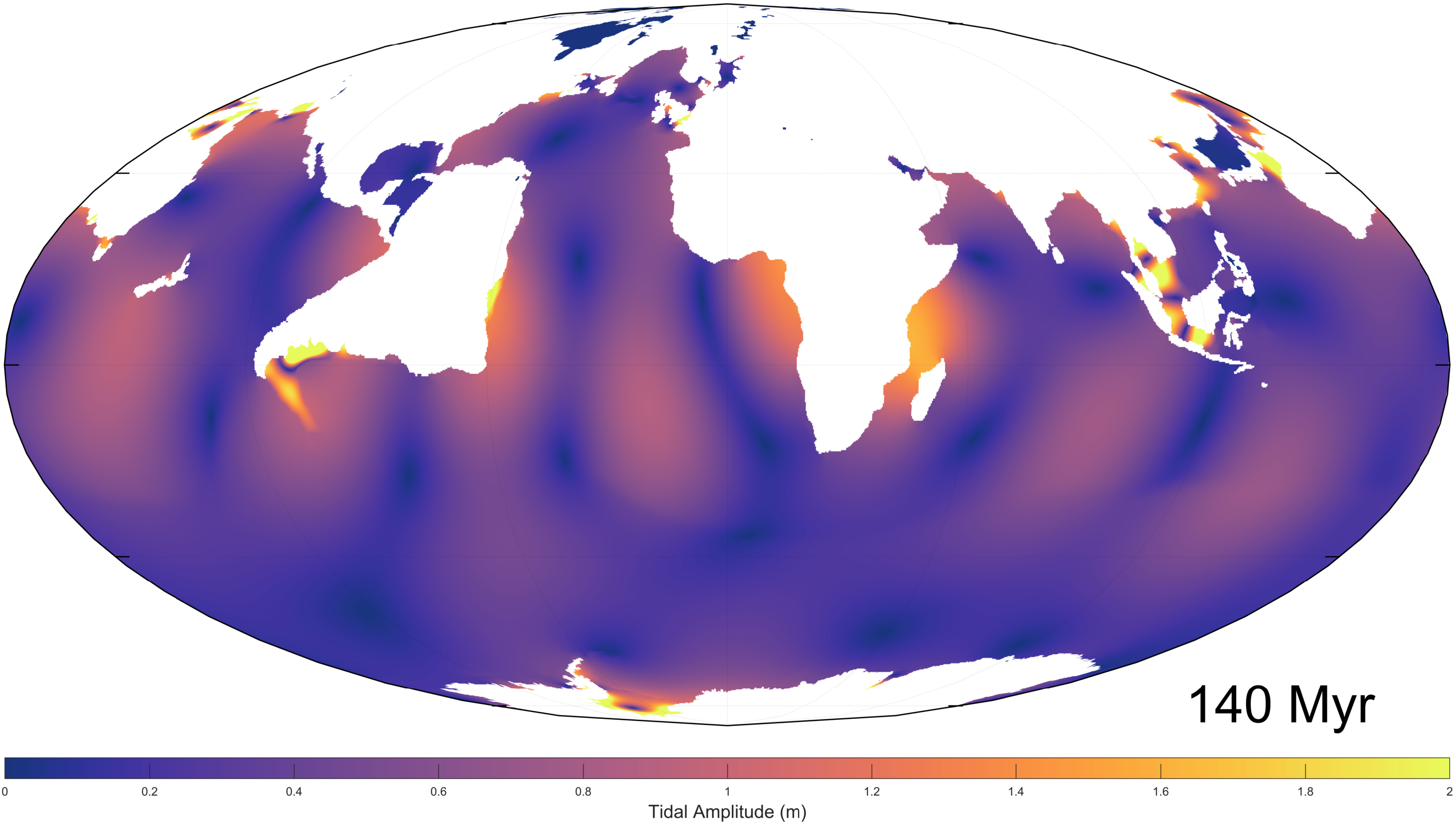


Figure S4h: Global M2 amplitudes for the (140 Myr) timeslice of the Amasia scenario. The colour scale saturates at 2 m.

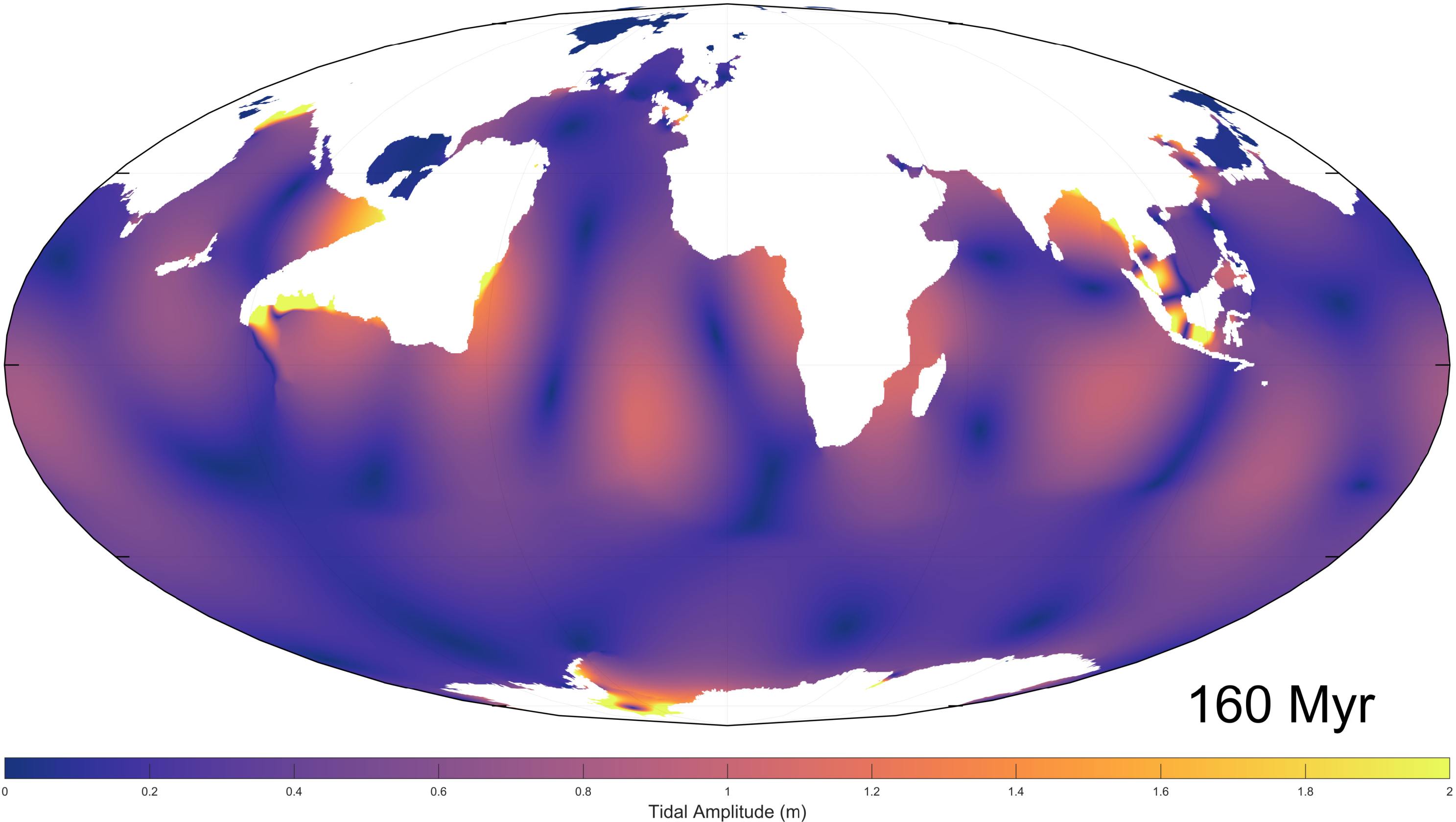


Figure S4i: Global M2 amplitudes for the (160 Myr) timeslice of the Amasia scenario. The colour scale saturates at 2 m.

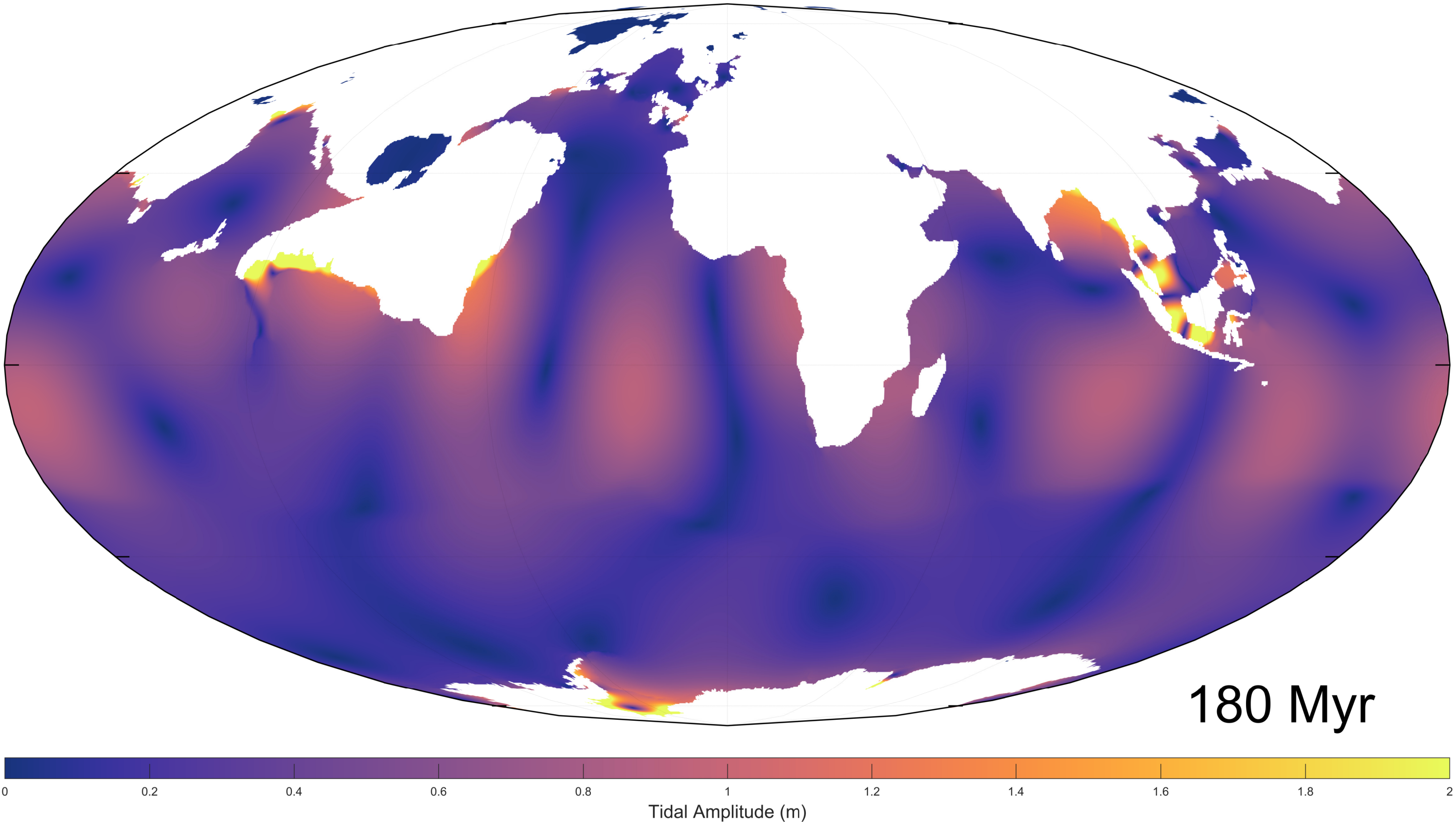


Figure S4j: Global M2 amplitudes for the (180 Myr) timeslice of the Amasia scenario. The colour scale saturates at 2 m.

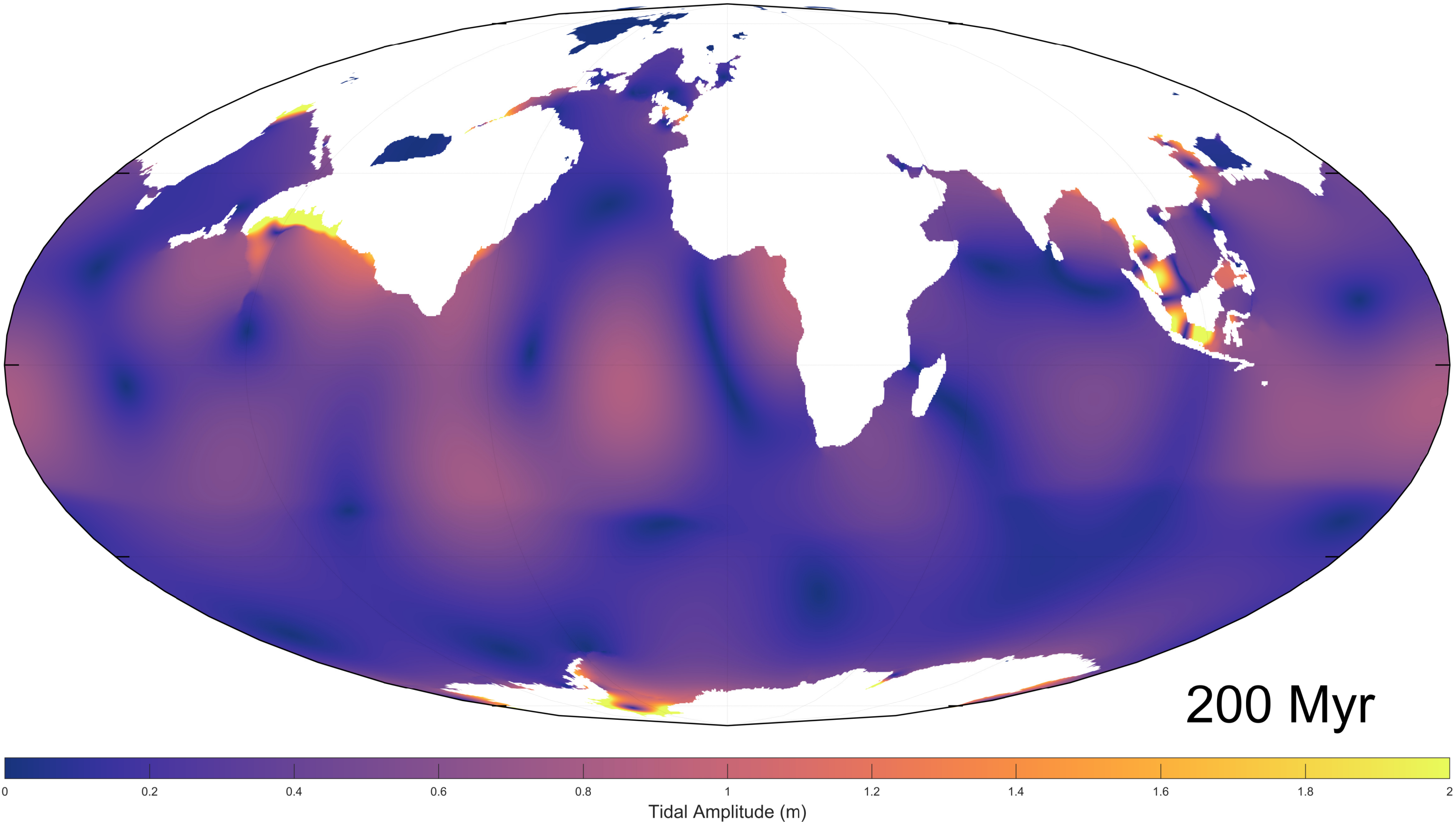


Figure S4k: Global M2 amplitudes for the (200 Myr) timeslice of the Amasia scenario. The colour scale saturates at 2 m.