

Phanerozoic Paleogeography Maps

by  
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## Phanerozoic Paleogeography Maps

The enclosed figures illustrate continental geography and continental position for fourteen different times, ranging from 547 to 16 Ma. The paleogeography figures outline areas of shallow seas/continental margins, landmasses, and mountains with lightly, darkly, and very darkly stippled patterns, respectively. Each paleogeography figure is followed by a figure which uses present day coastlines and continental margins to identify the configured continents. The times of reconstructions and their associated data files are summarized in Table A.

These paleogeographic reconstructions are derived from the Paleooceanographic Mapping Project (POMP) tectonic data base and from paleogeographic compilations by Zeigler et. al., 1983, Scotese et. al., 1979, and Hulver, 1985. First, a reconstruction for one of the specific times is created using the rotation file PGEOG.ROT and a low resolution geographic data file, PZMZ\_FAST.DAT, which contains present day coastlines and continental margins. This coastline and continental margin reconstruction serves as a basemap, atop of which are drawn paleogeographic boundary lines. The boundary lines are then segmented and identified according to geography (e.g., a line marking the outer edge of a mountainous region) and according to the present day tectonic element upon which it is drawn (e.g., a coastline boundary on the South American craton). Each of these segments is digitized as an individual string. All of the strings for a single time period comprise a paleogeographic data file. Finally, each string of the newly digitized paleogeographic data file is rotated to its present day position, in accordance with the PGEOG.ROT rotation parameters.

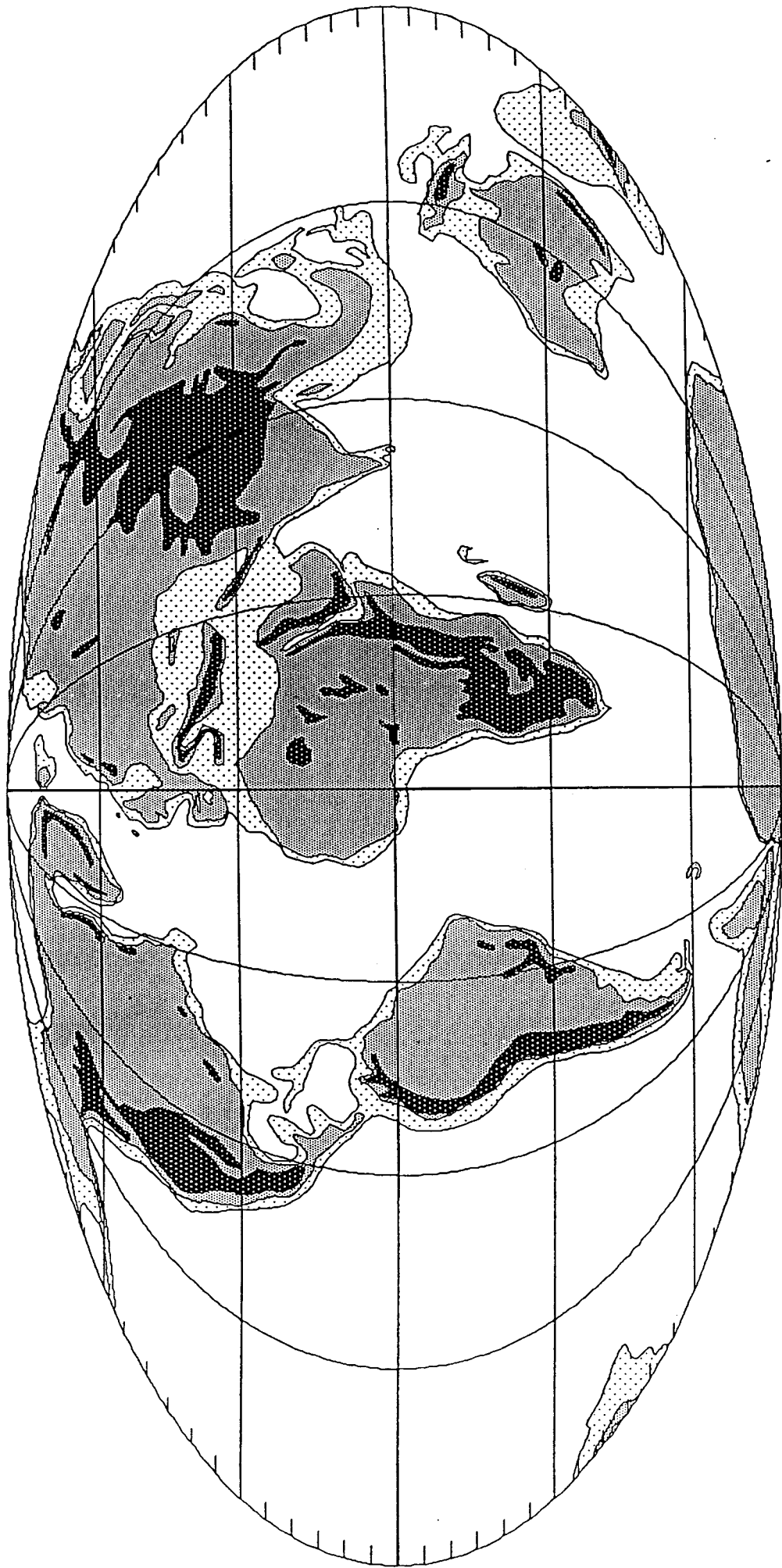
With strings rotated to present positions, the paleogeographic data files may be used to generate maps in a manner similar to other POMP geographic data files. For example, a paleogeography map for the Cenomanian age may be created with the program PALEOMAP, using 95, PGEOG.ROT, and PG\_CEN.DAT as respective input for Time (Ma) of Reconstruction, User Specified Rotation File, and Special Geographic Data File.

## References

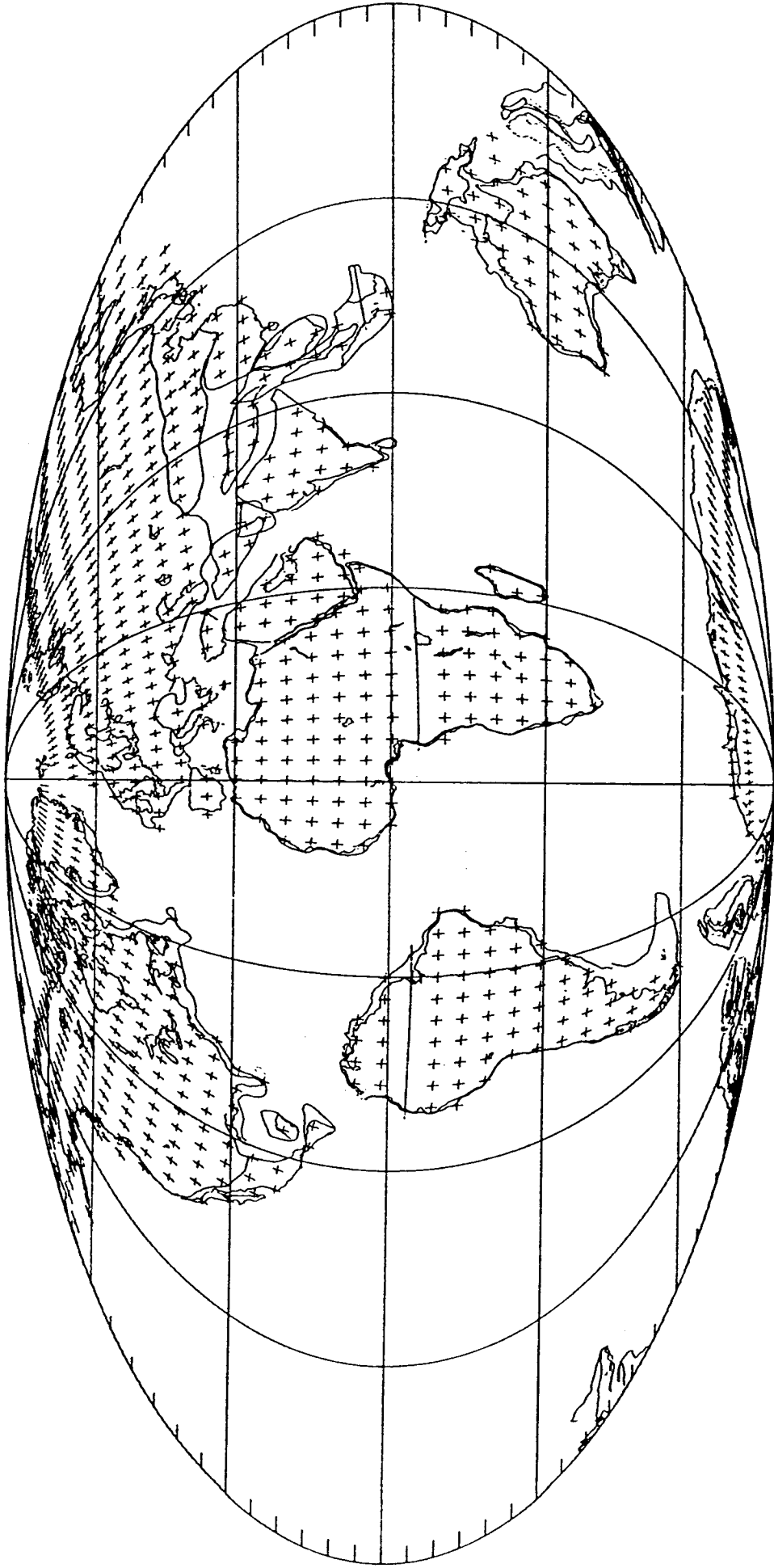
- Hulver, M. L., 1985: Cretaceous Marine Paleogeography of Africa. Master's Thesis, University of Chicago, 49 pages.
- Scotese, C. R., Bambach, R. K., Barton, C., Van der Voo, R., and Zeigler, A. M., 1979: Paleozoic Basemaps. Journal of Geology,87:217-277.
- Zeigler, A. M., Scotese, C. R., Barrett, S. F., 1982: Mesozoic and Cenozoic Paleogeographic Maps, *in: Tidal Friction and the Earth's Rotation II*, Brosche, P. and Sünderman, J., eds., Springer-Verlag, Berlin, pp. 240-252.

**Table A. Times of Paleogeographic Reconstructions**

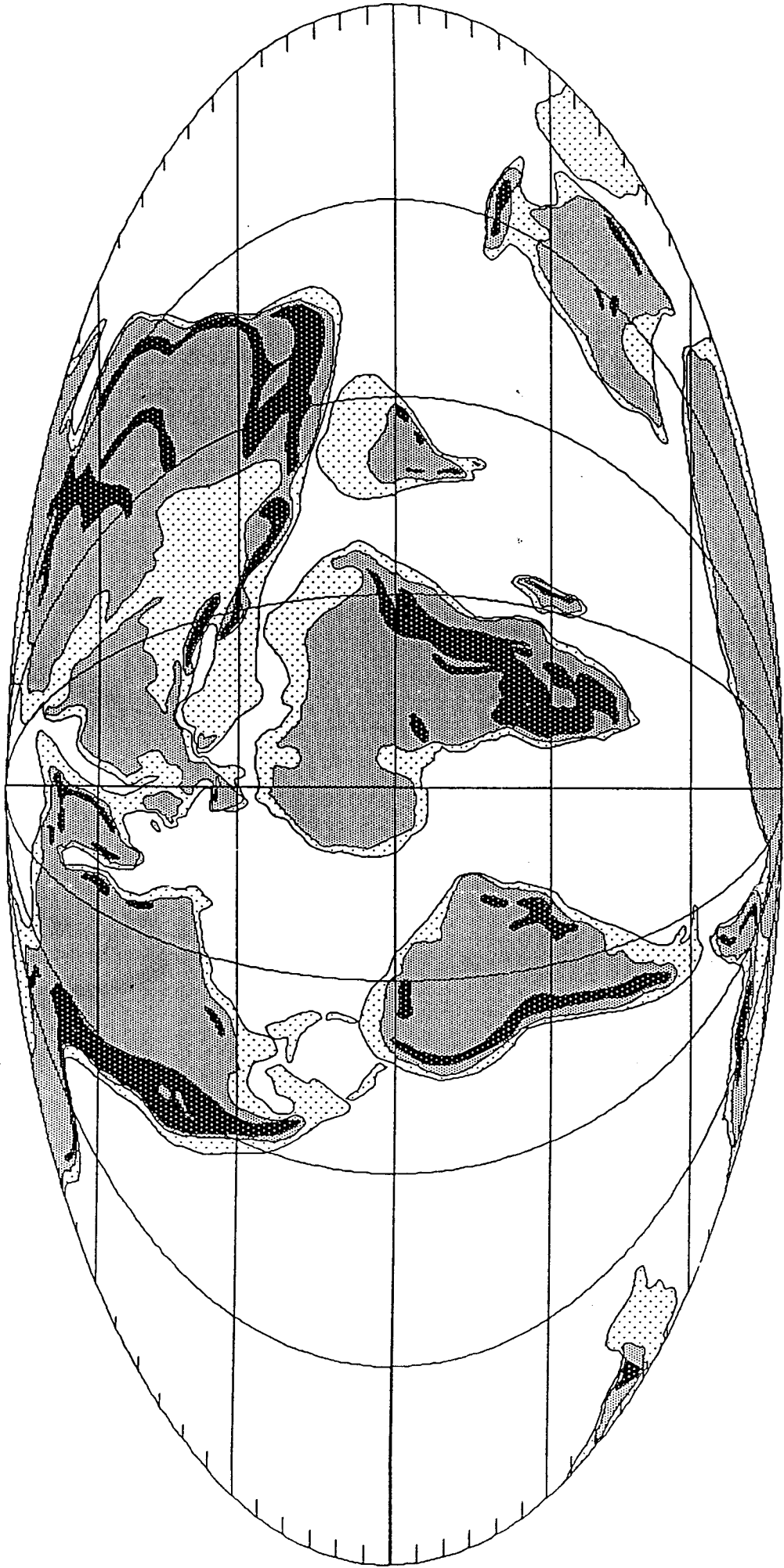
<b>Ma</b>	<b>Stratigraphic Age</b>	<b>File Name</b>
<b>Cenozoic</b>		
16	Vindobonian	PG_VIN.DAT
48	Lutetian	PG_LUT.DAT
<b>Mesozoic</b>		
70	Maestrichtian	PG_MAE.DAT
95	Cenomanian	PG_CEN.DAT
148	Volgian	PG_VOL.DAT
195	Pliensbachian	PG_PLI.DAT
<b>Paleozoic</b>		
242	Induan	PG_IND.DAT
255	Kazanian	PG_KAZ.DAT
306	Westphalian	PG_WEST.DAT
342	Visean	PG_VIS.DAT
390	Emsian	PG_EMS.DAT
425	Wenlockian	PG_WEN.DAT
458	Caradocian-Llandeilian	PG_CL.DAT
547	Franconian	PG_FRAN.DAT



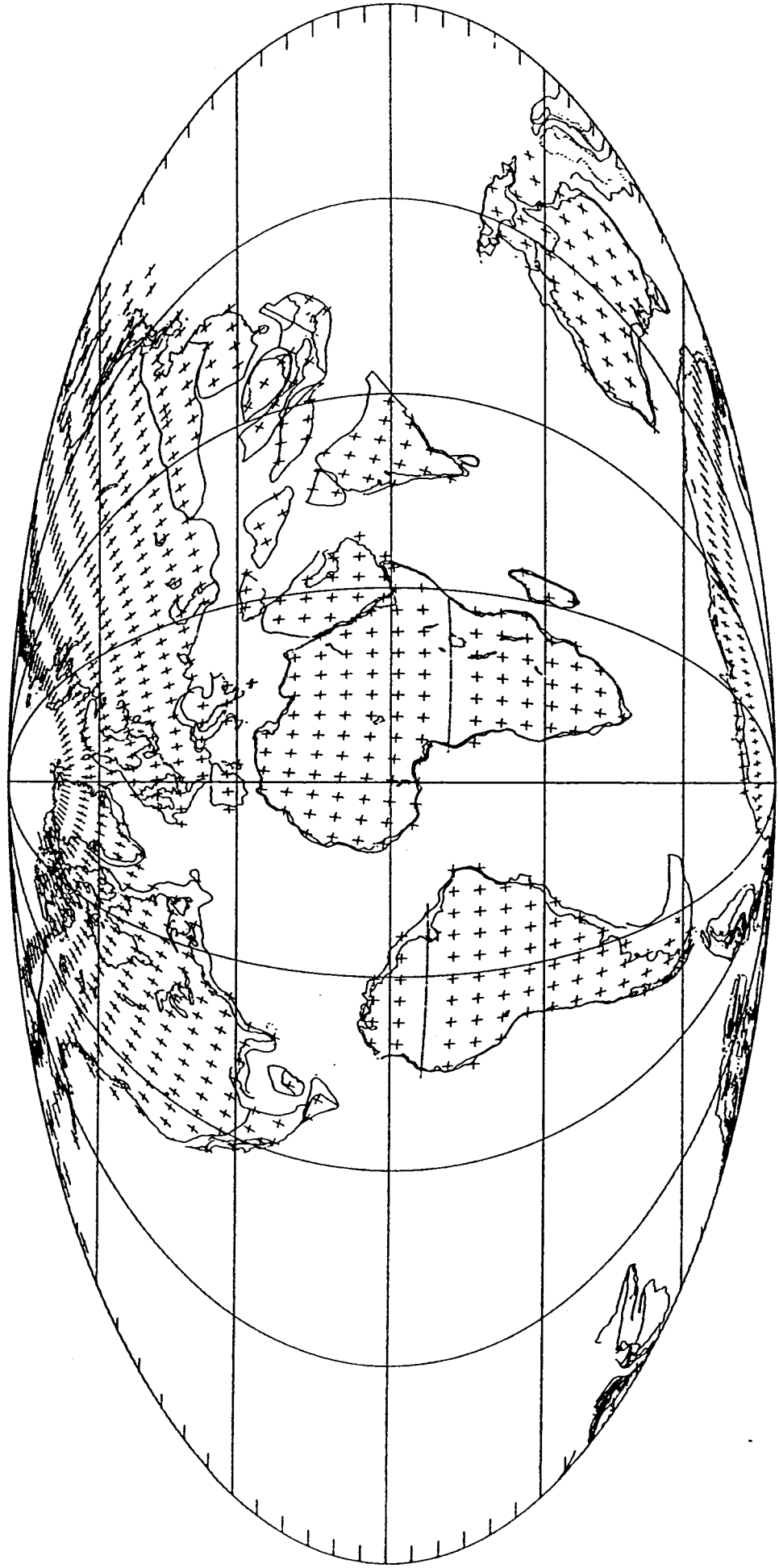
Vindobonian 16 Ma



Vindobonian 16 Ma

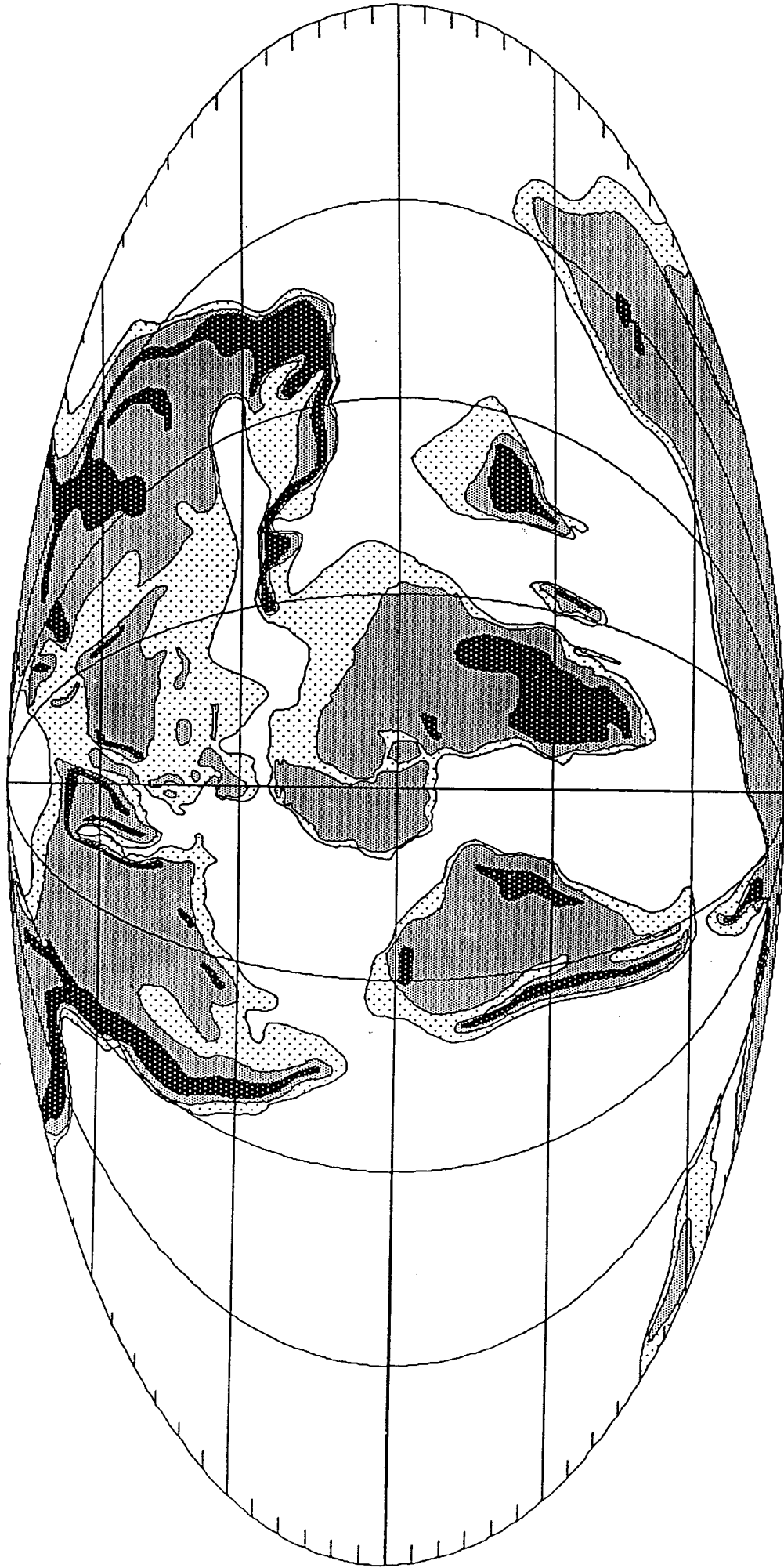


Lutetian 48 Ma

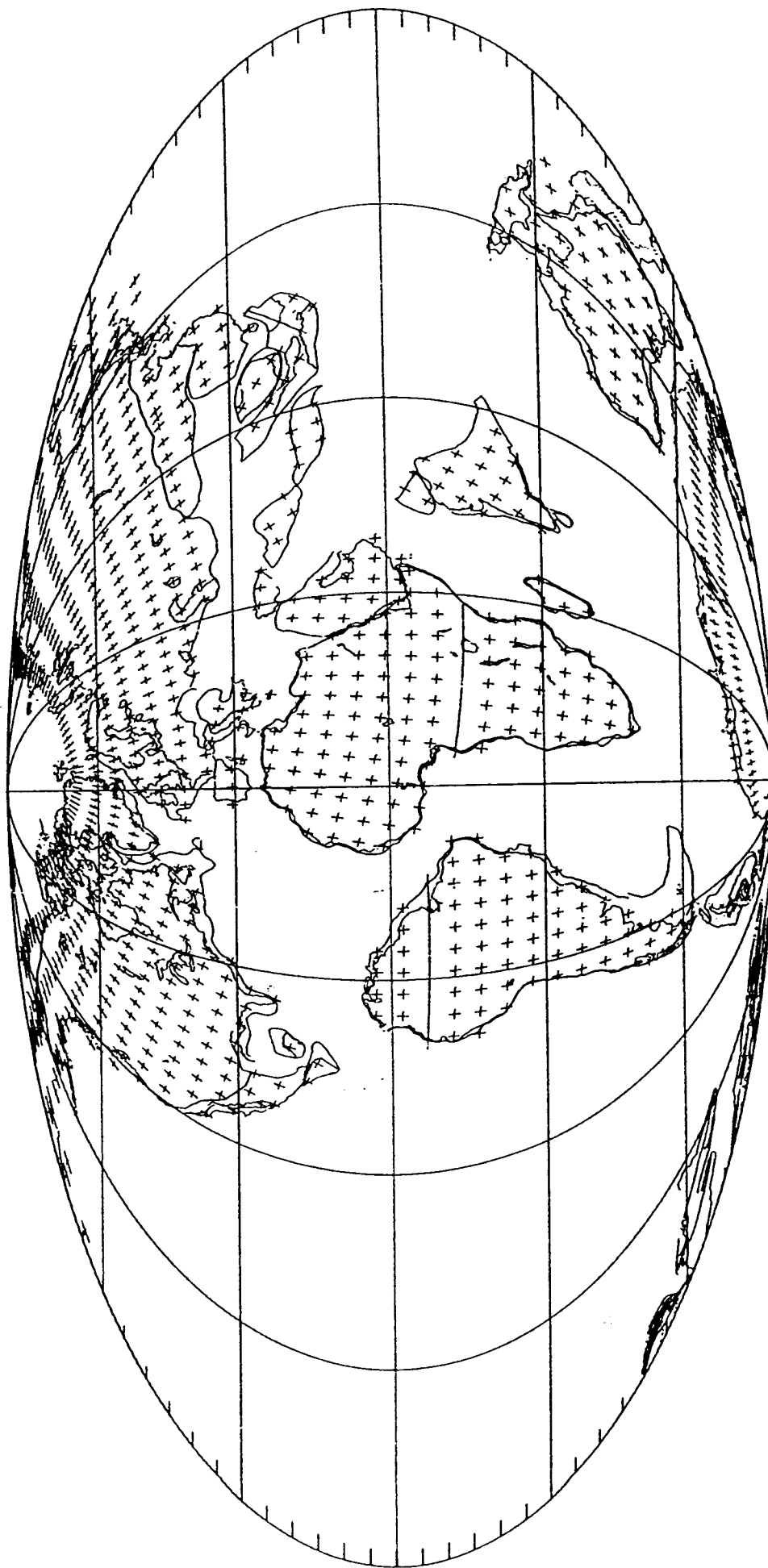


Lutetian 48 Ma

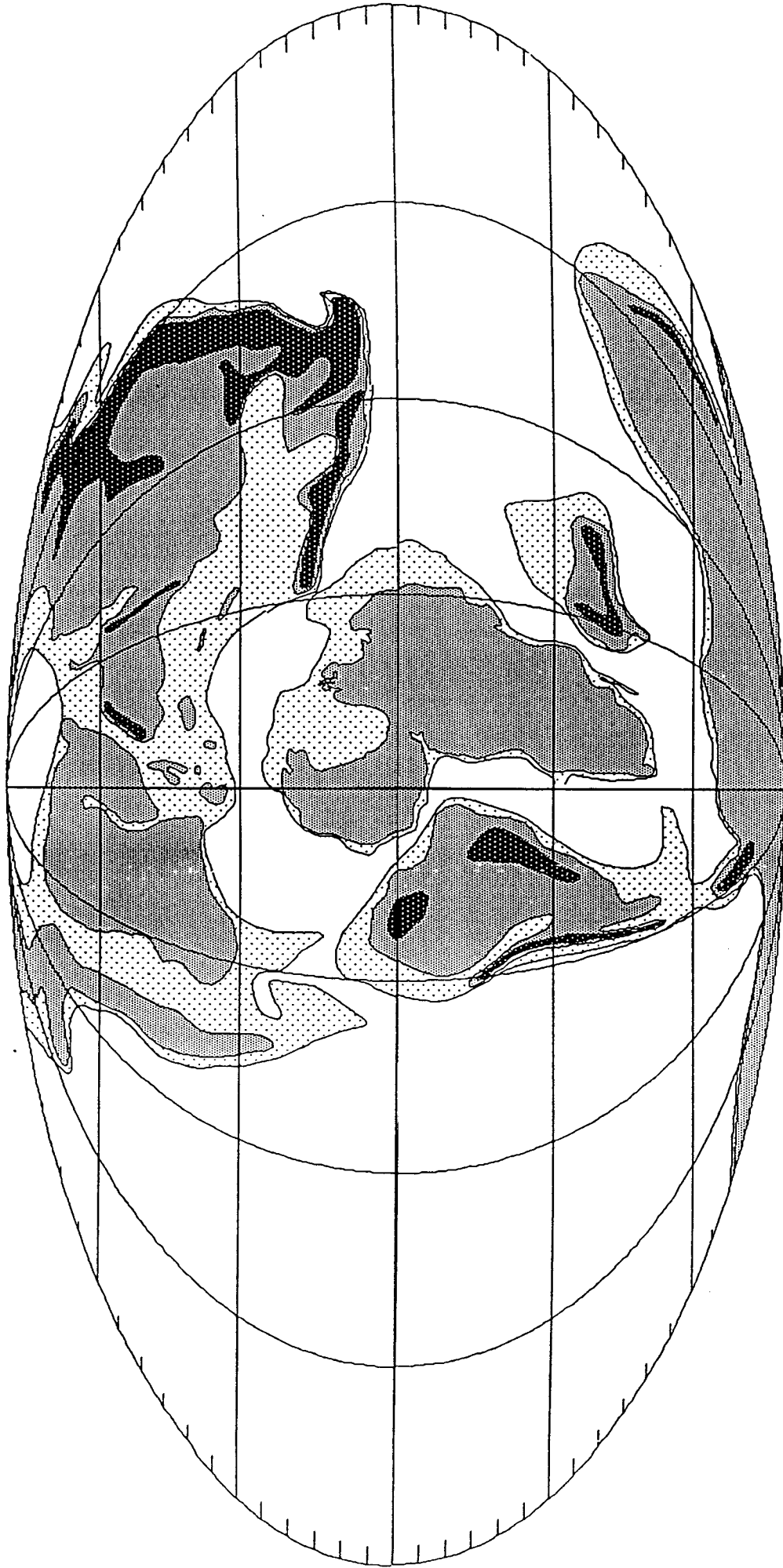




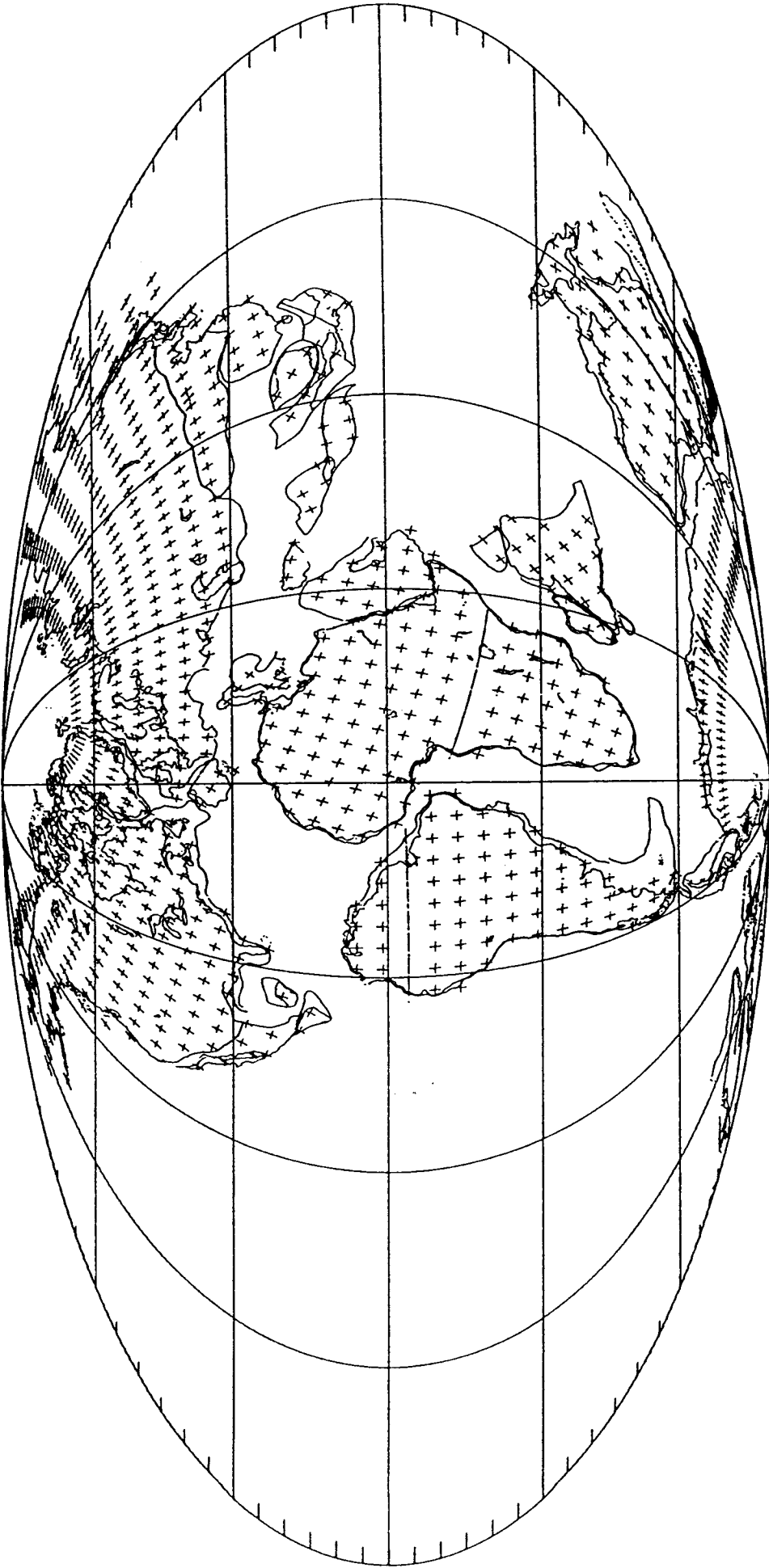
Maestrichtian 70 Ma



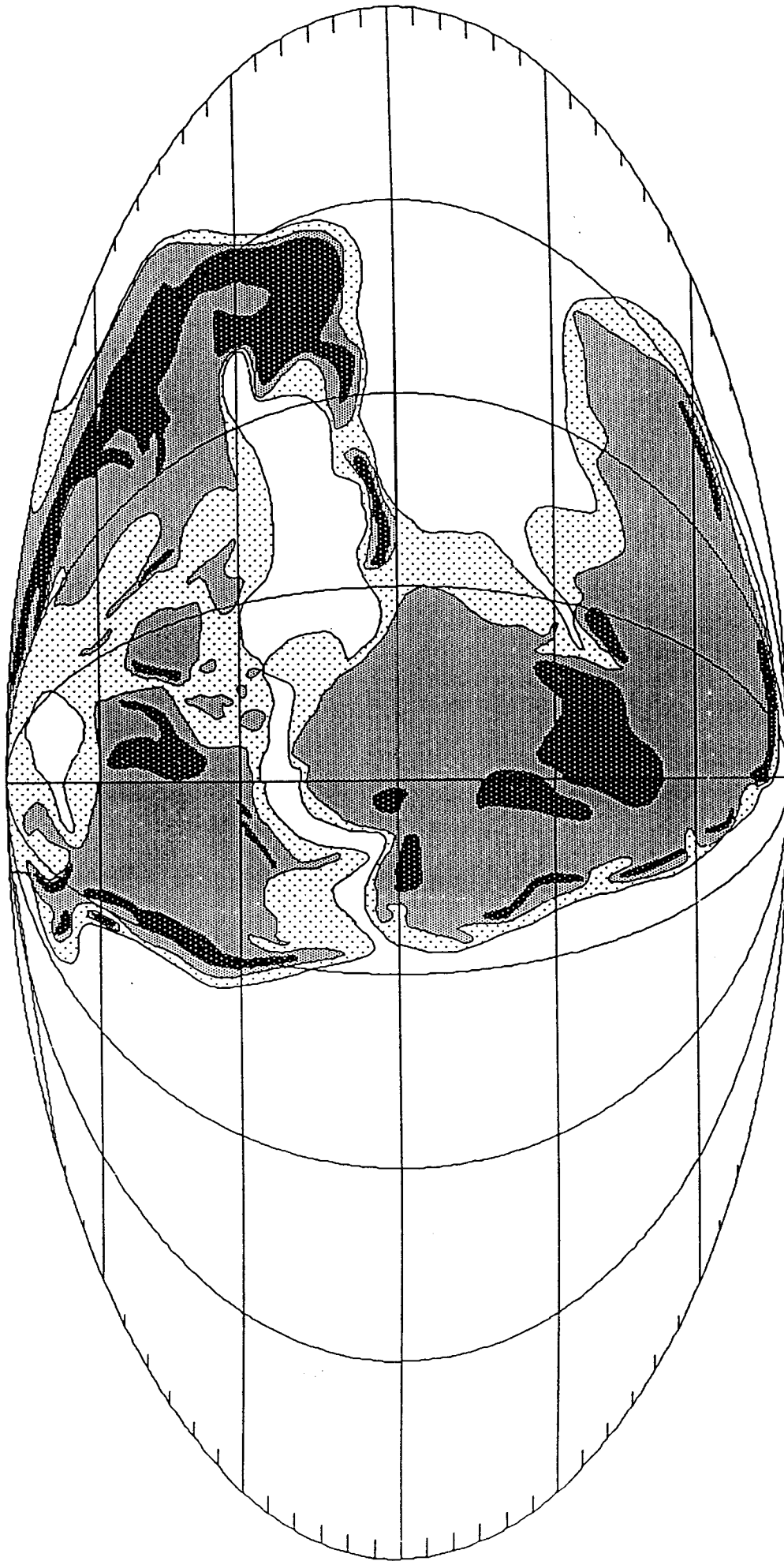
Maestrichtian 70 Ma



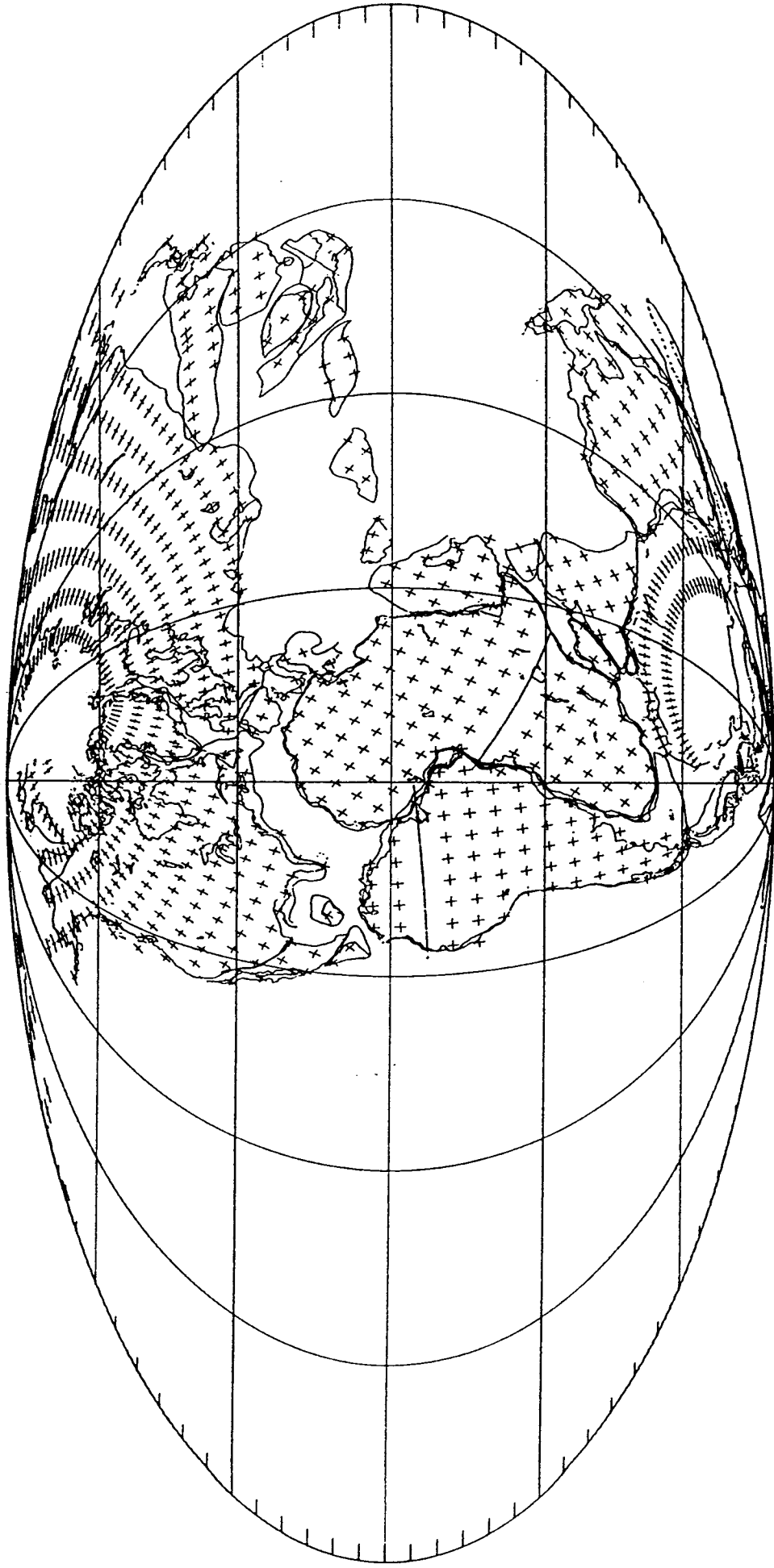
Cenomanian 95 Ma



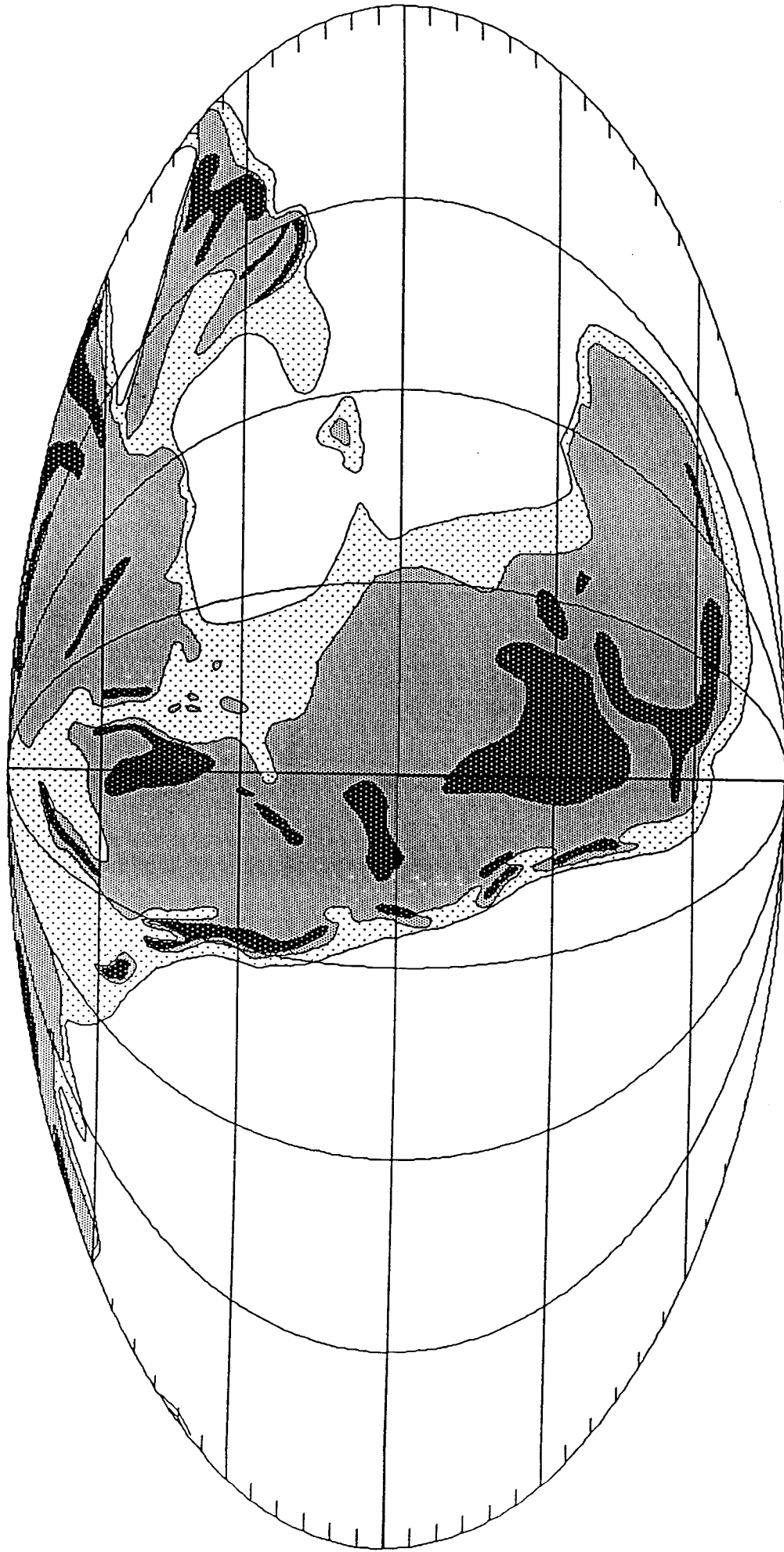
Cenomanian 95 Ma



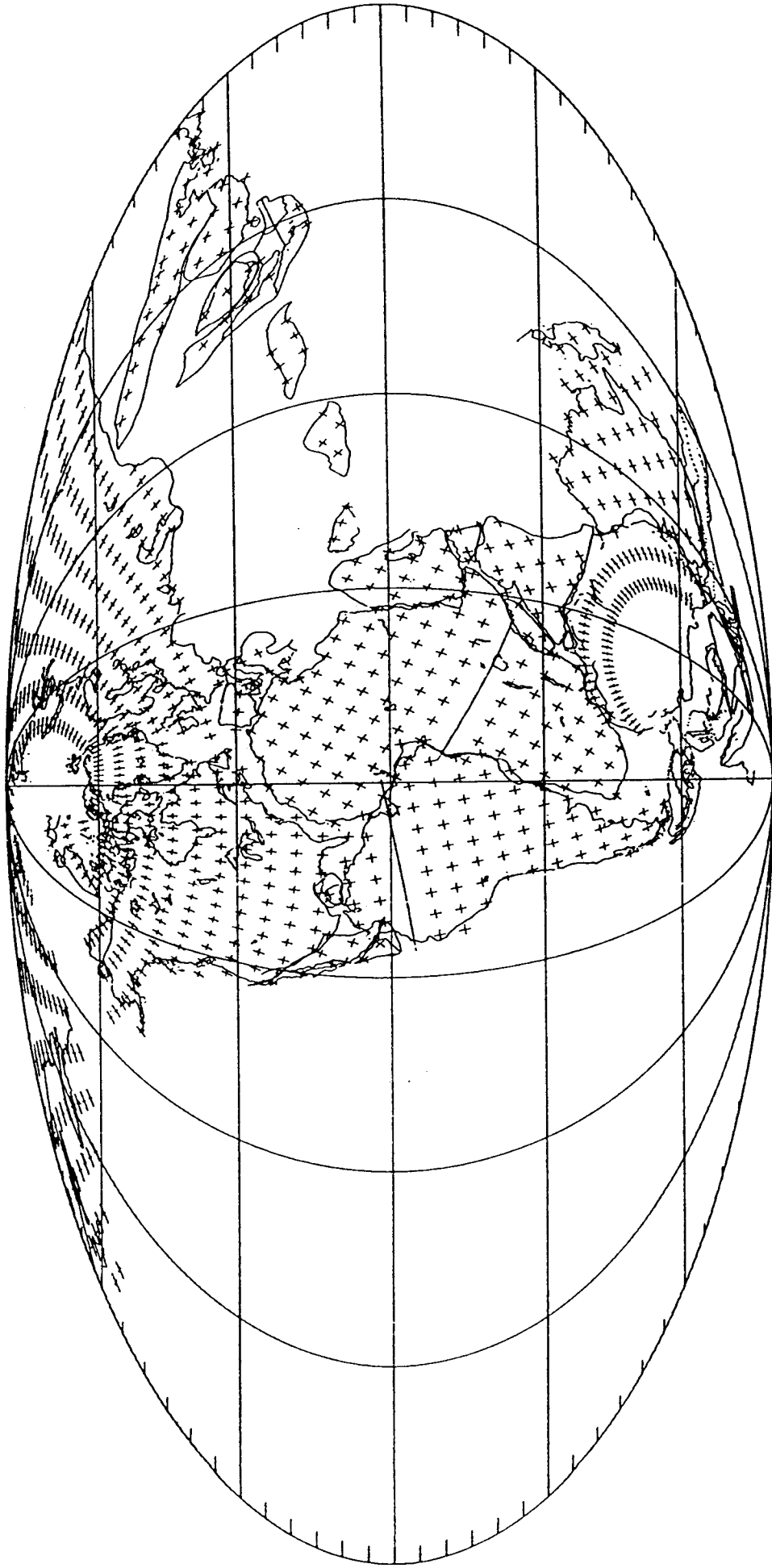
Volgian 148 Ma



**Volgian 148 Ma**

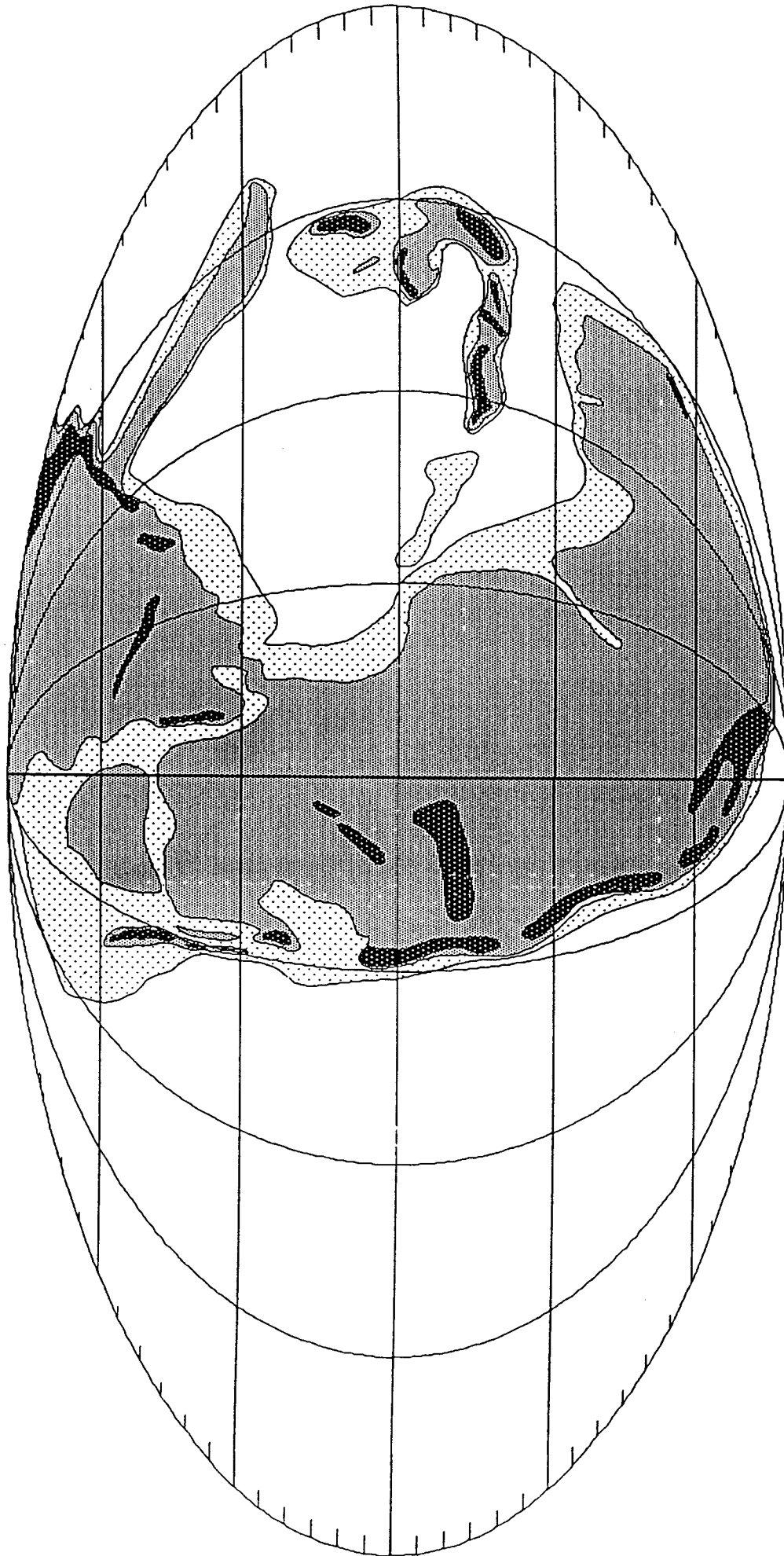


Pliensbachian 195 Ma

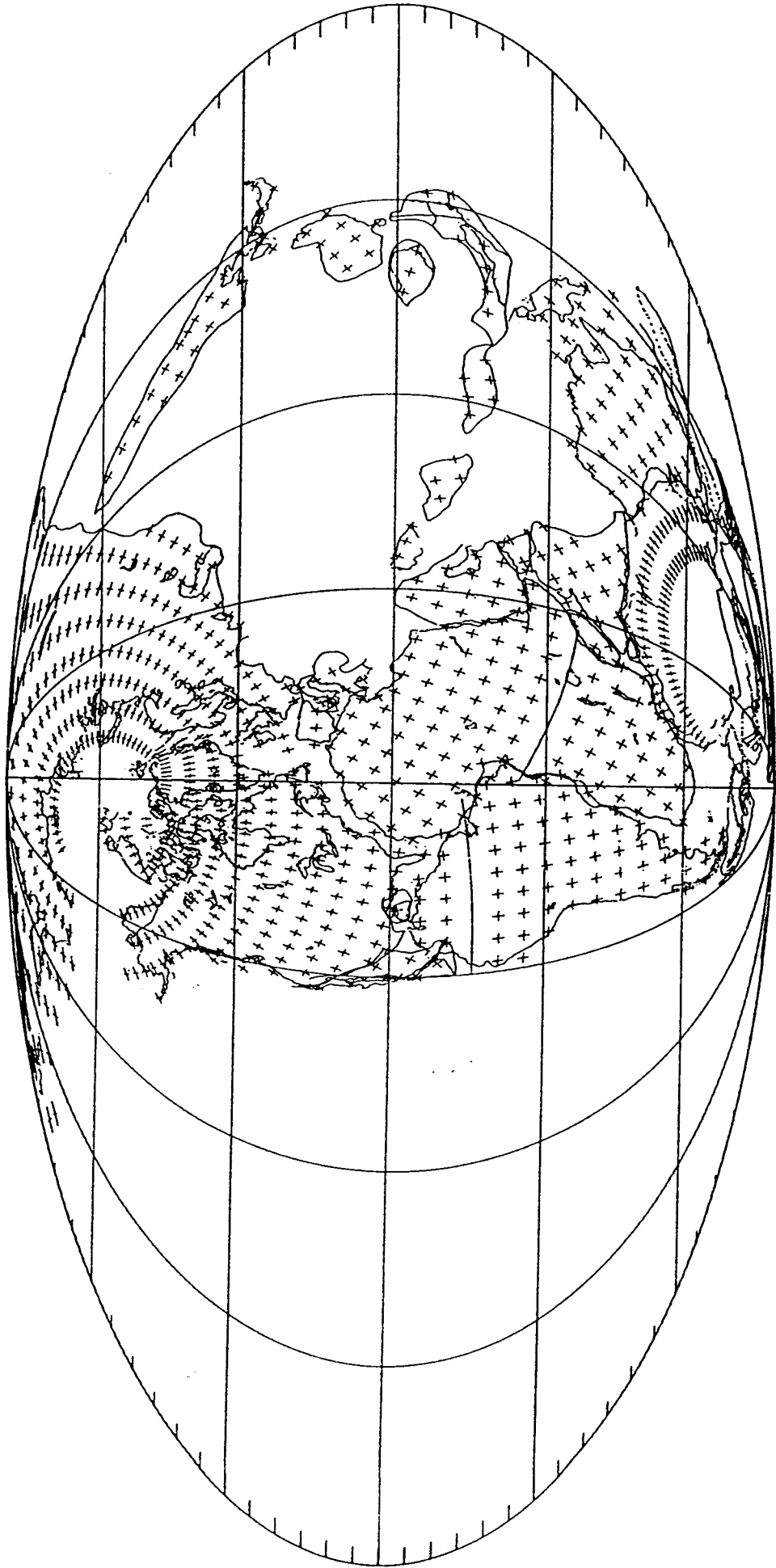


Pliensbachian 195 Ma

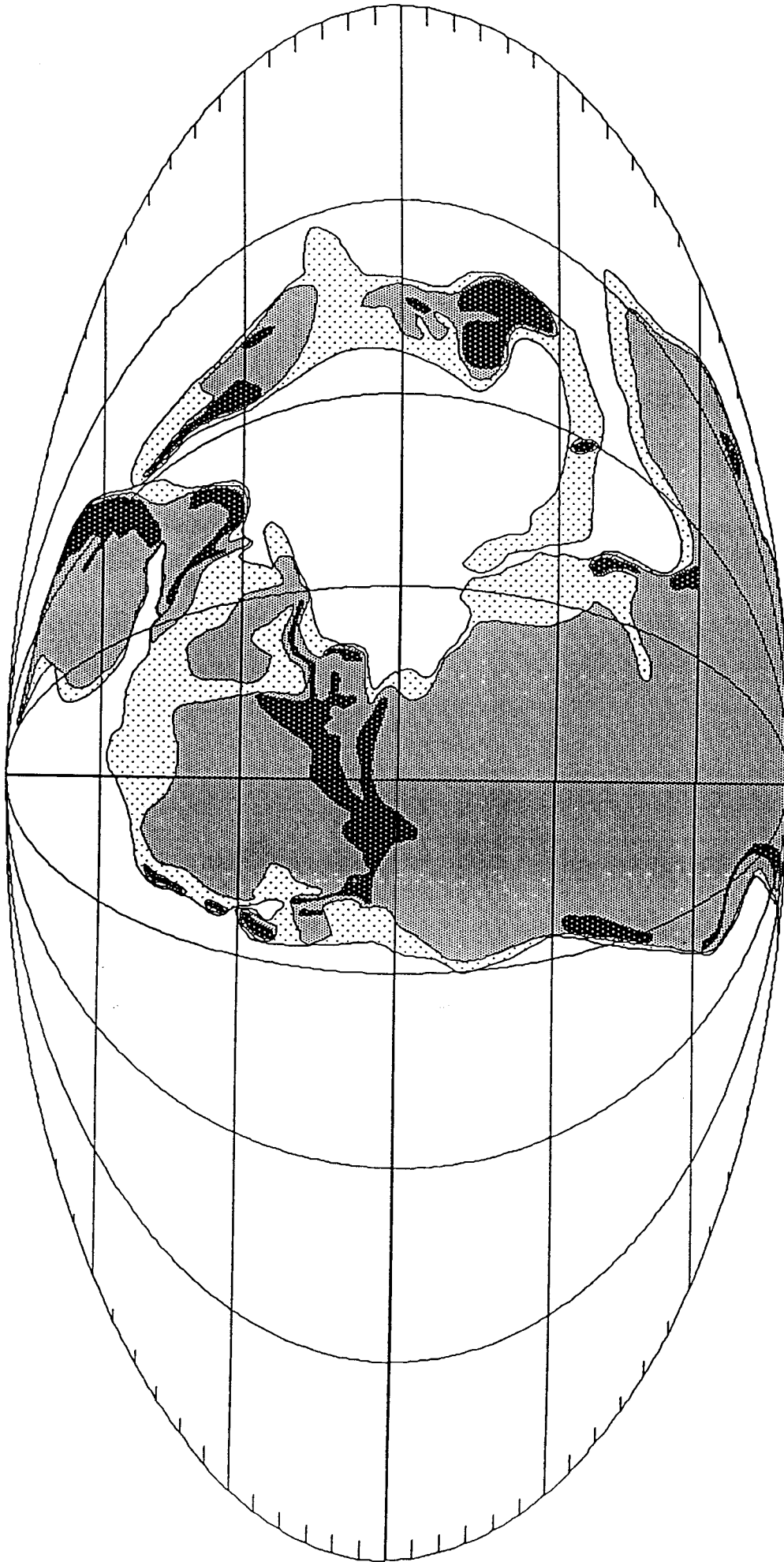




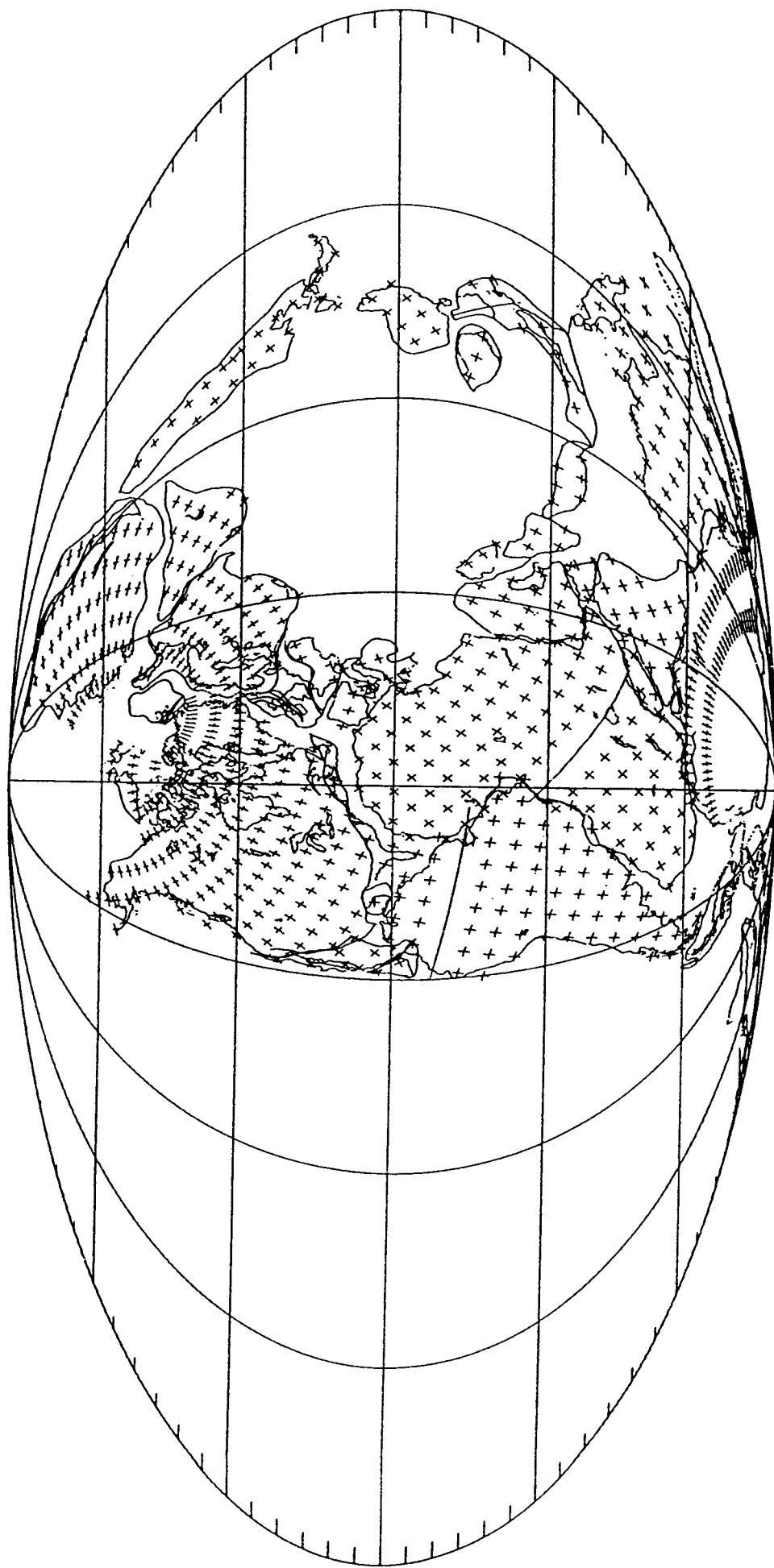
Induan 242 Ma



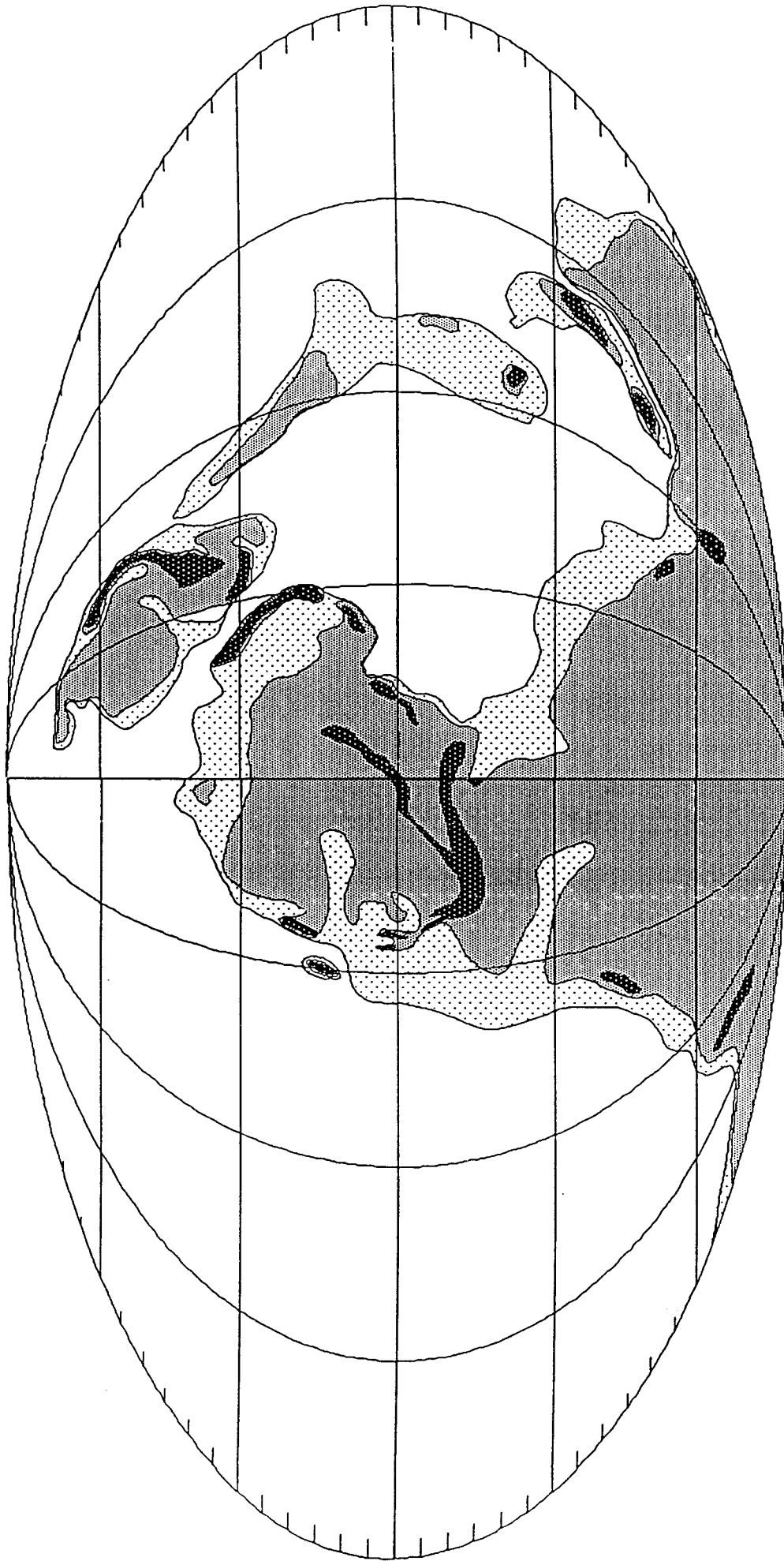
**Induan 242 Ma**



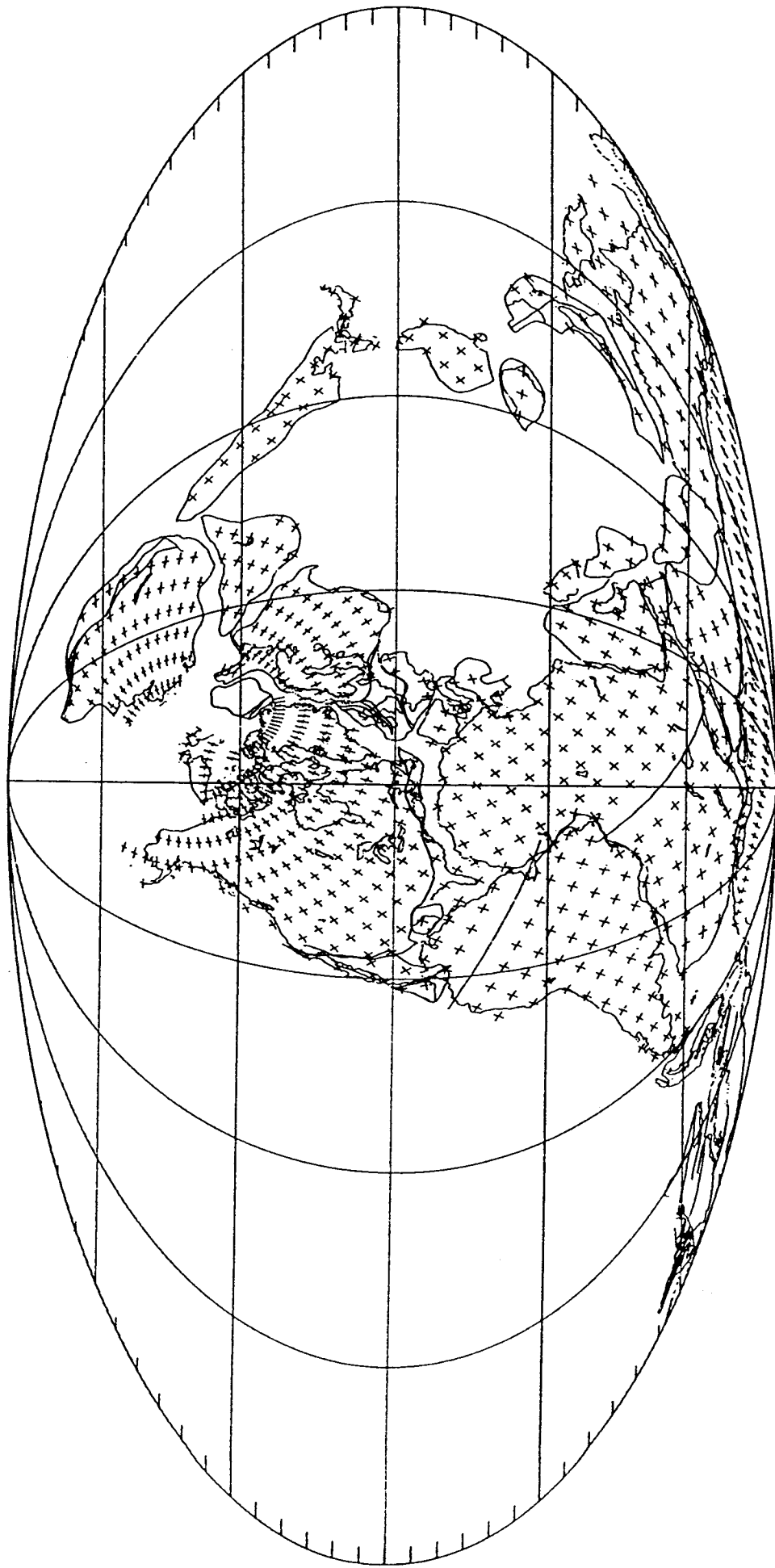
Kazanian 255 Ma



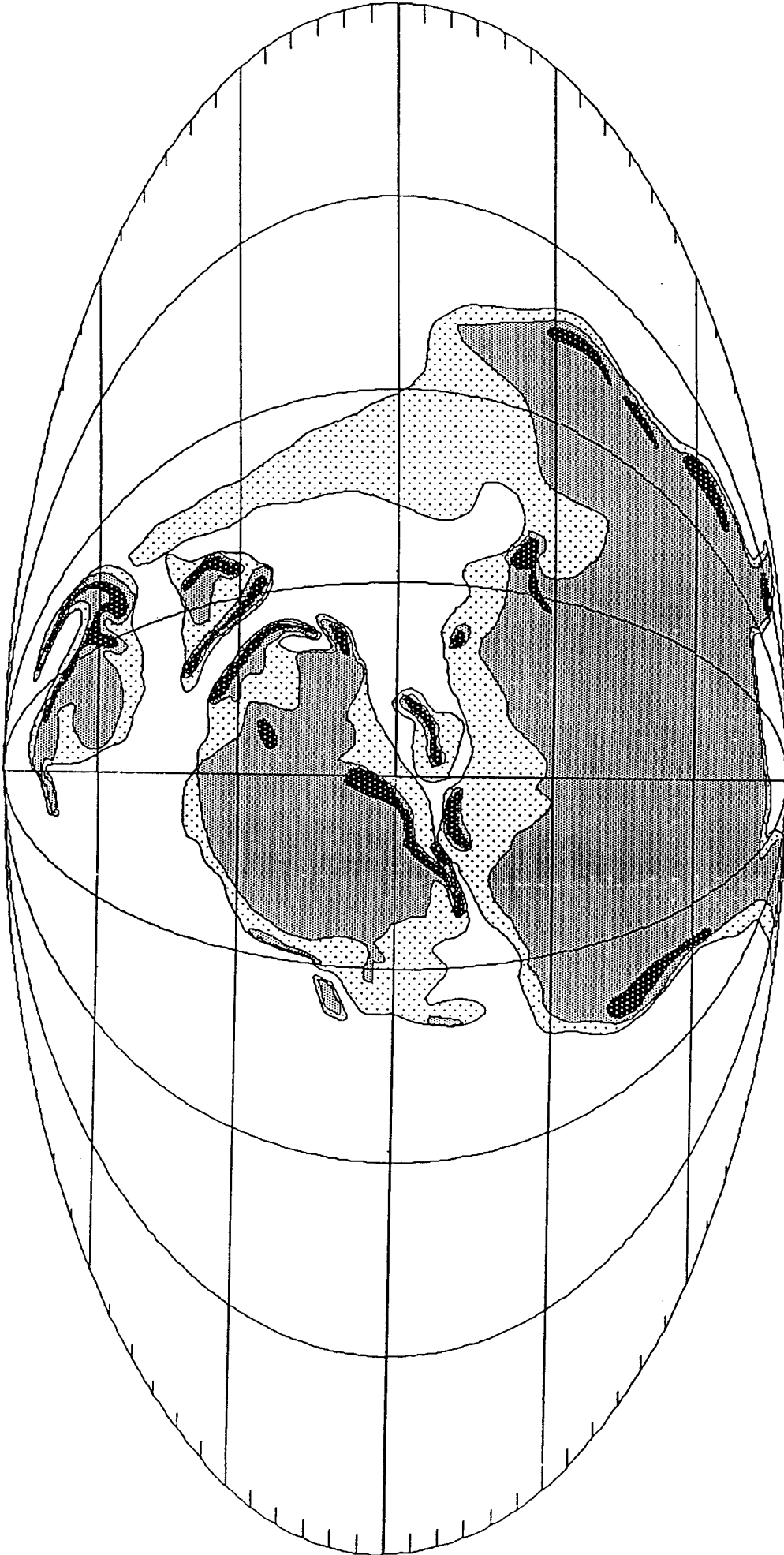
**Kazanian 255 Ma**



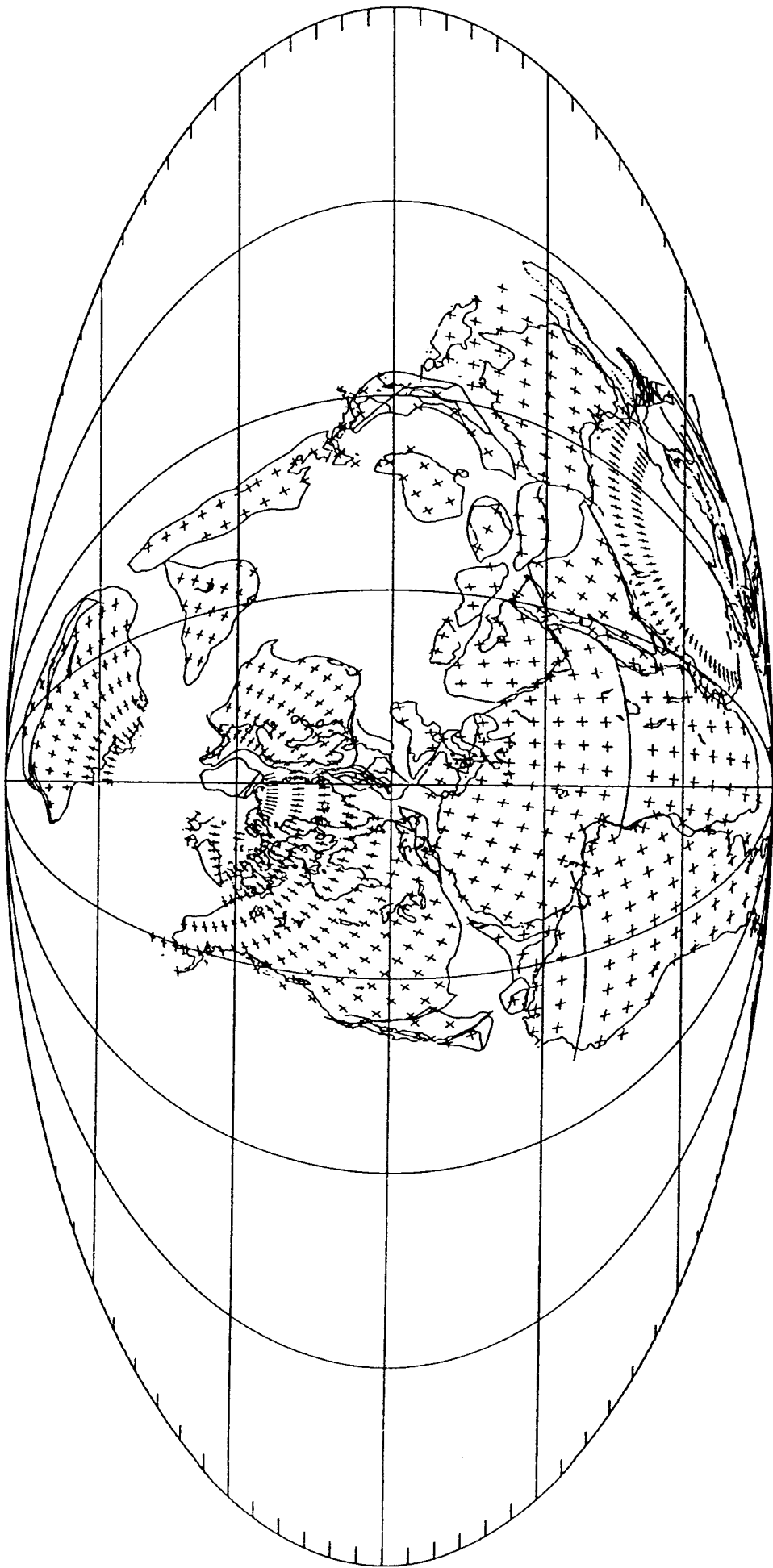
Westphalian 306 Ma



Westphalian 306 Ma

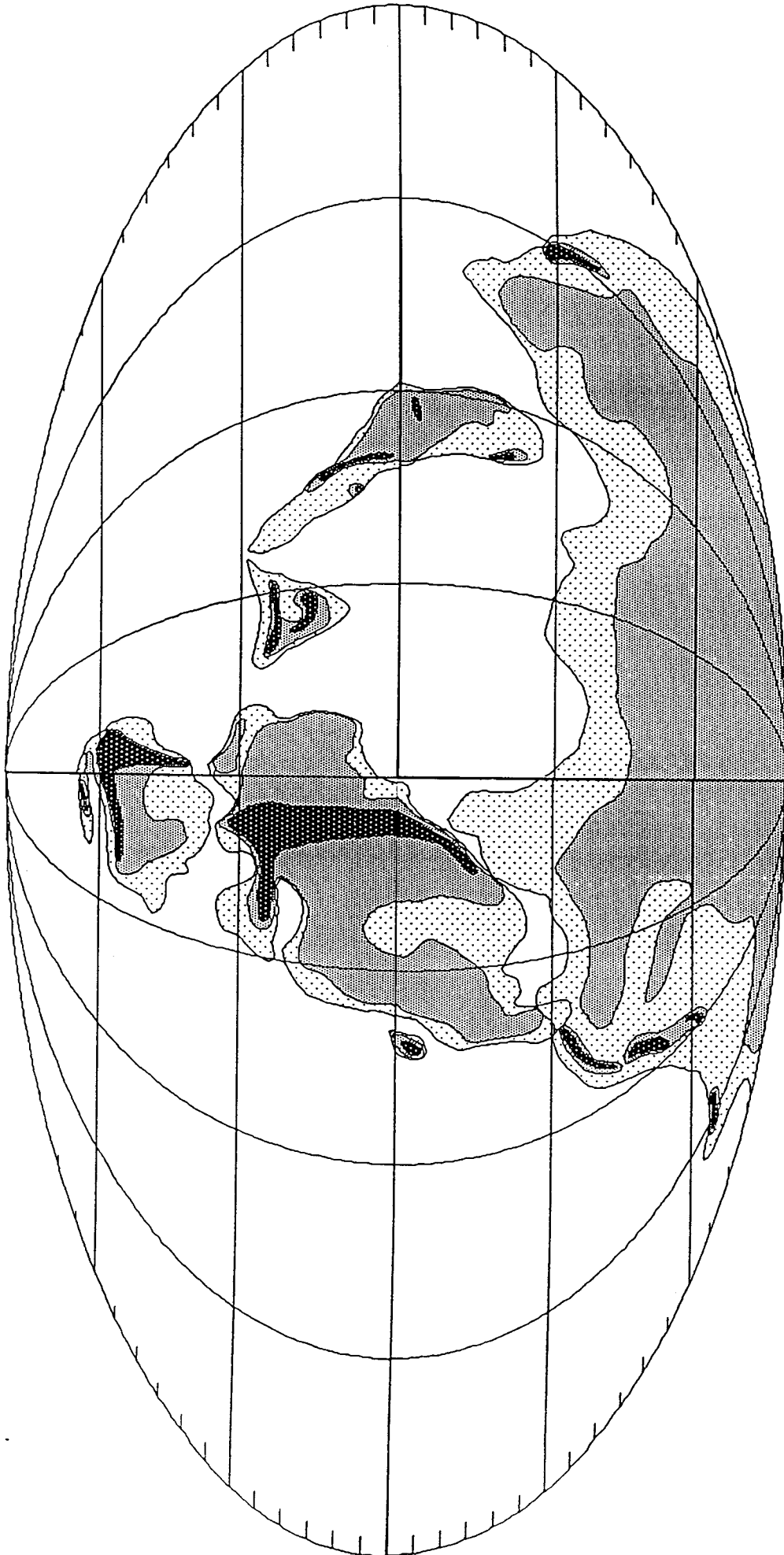


Viscan 342 Ma

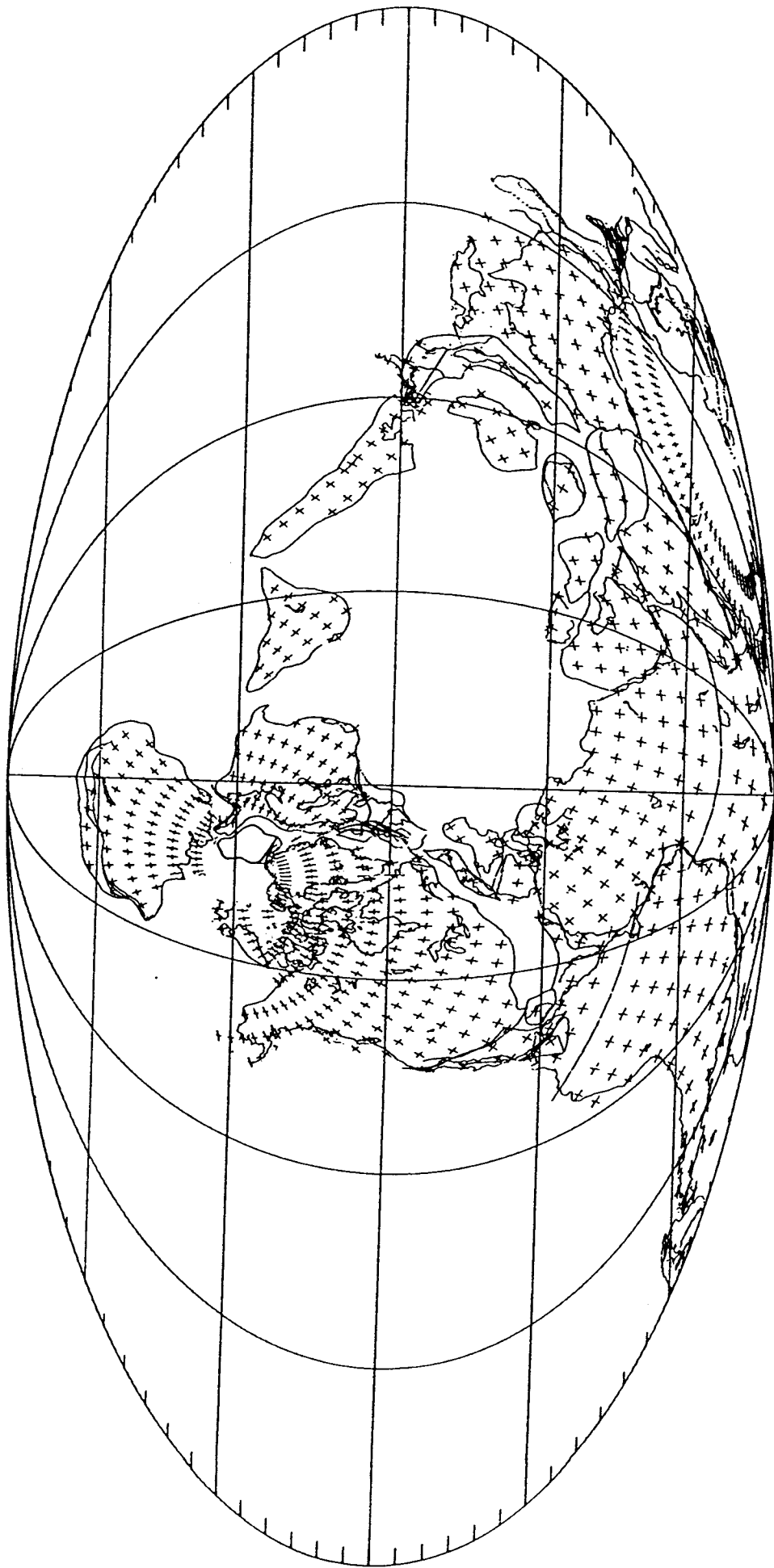


**Visian 342 Ma**

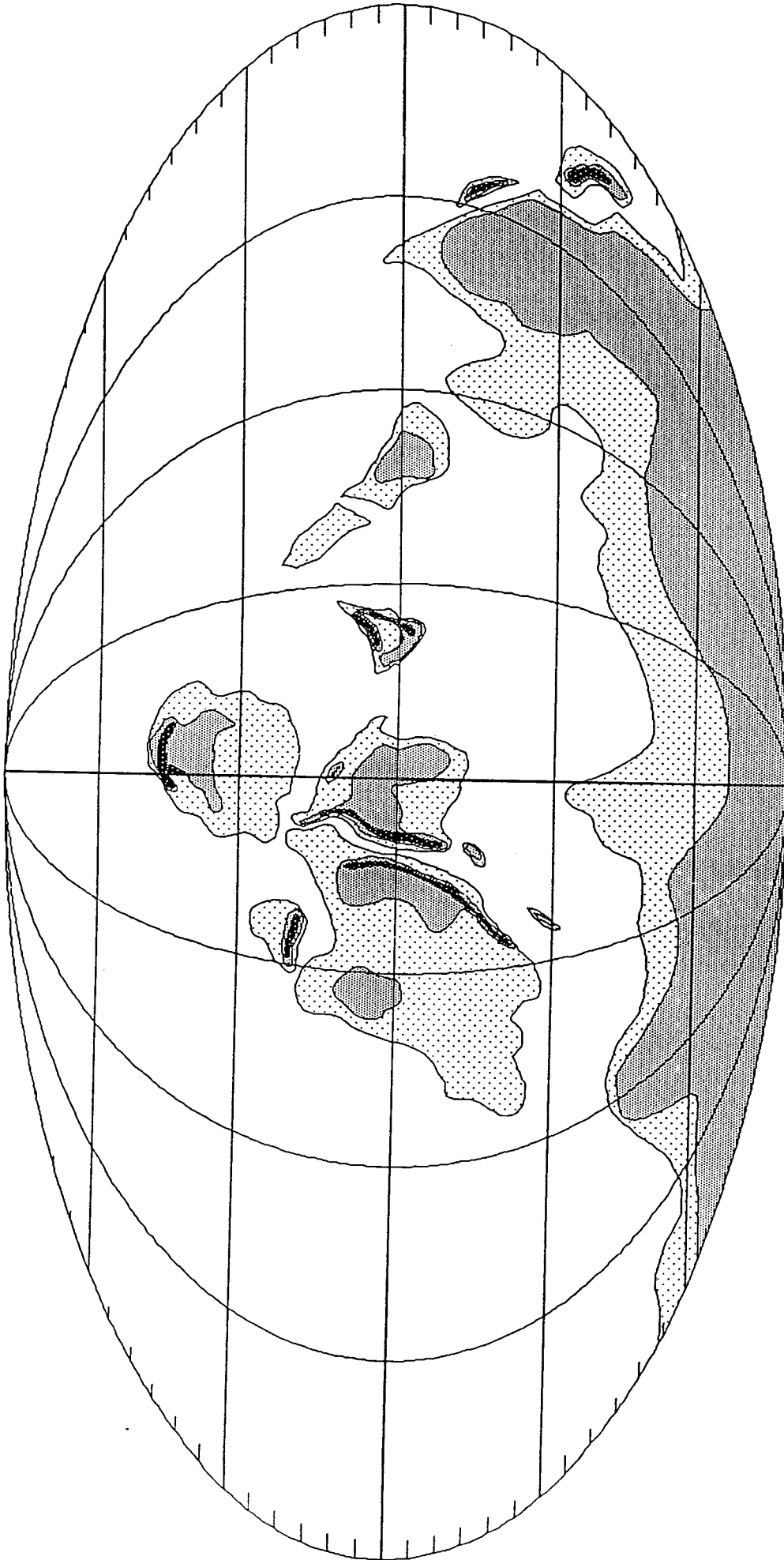




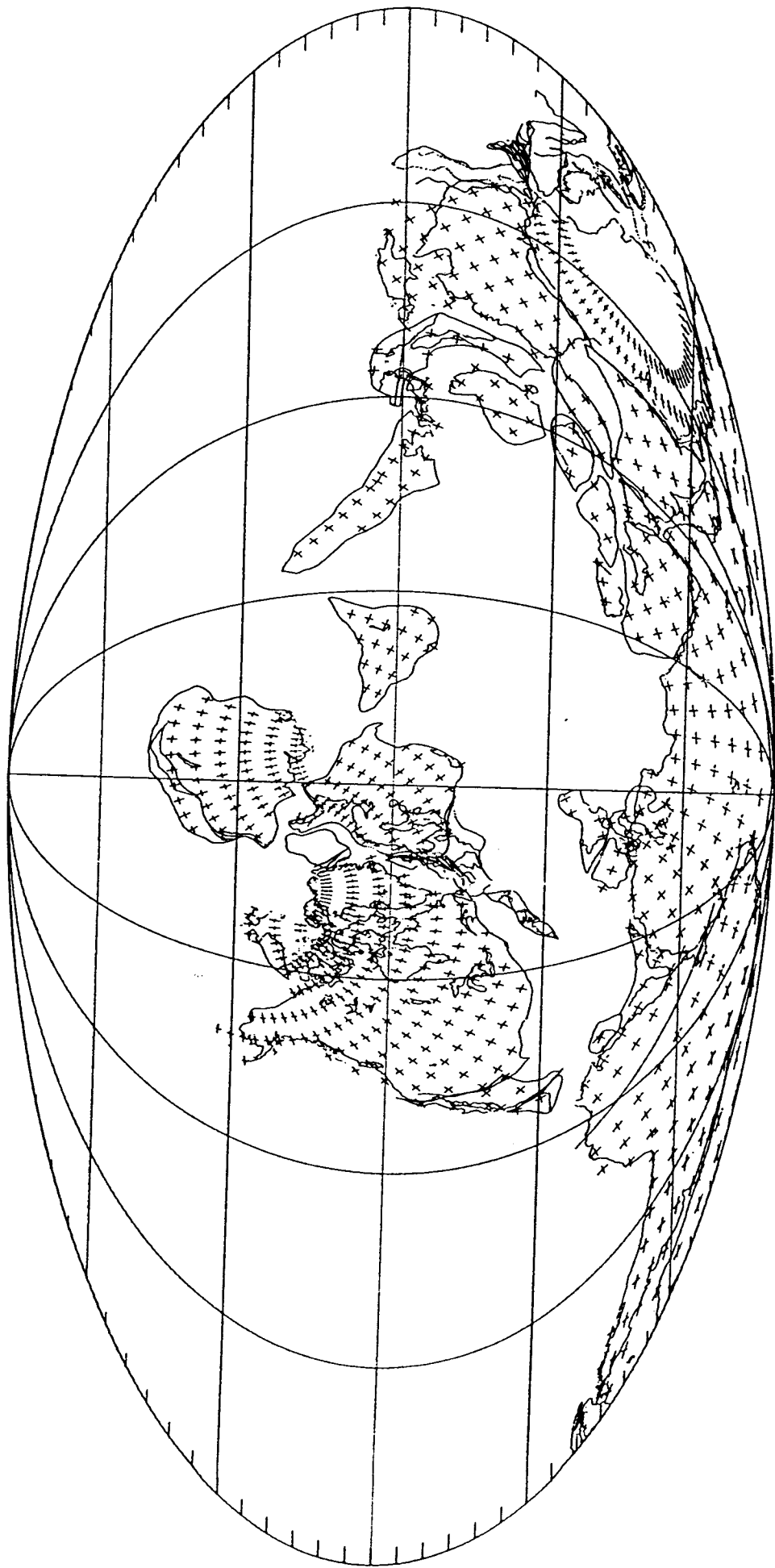
Emsian 390 Ma



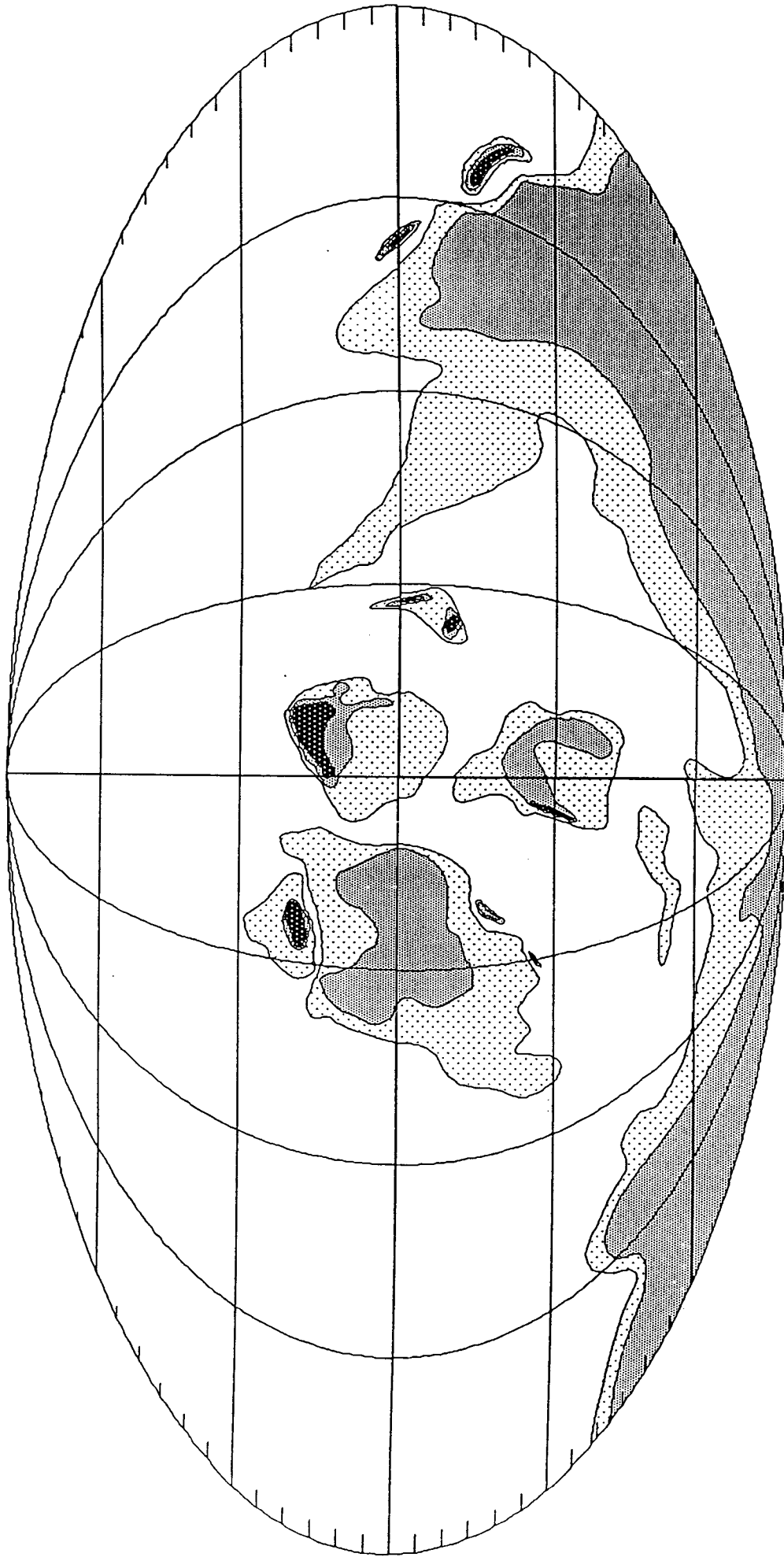
**Emsian 390 Ma**



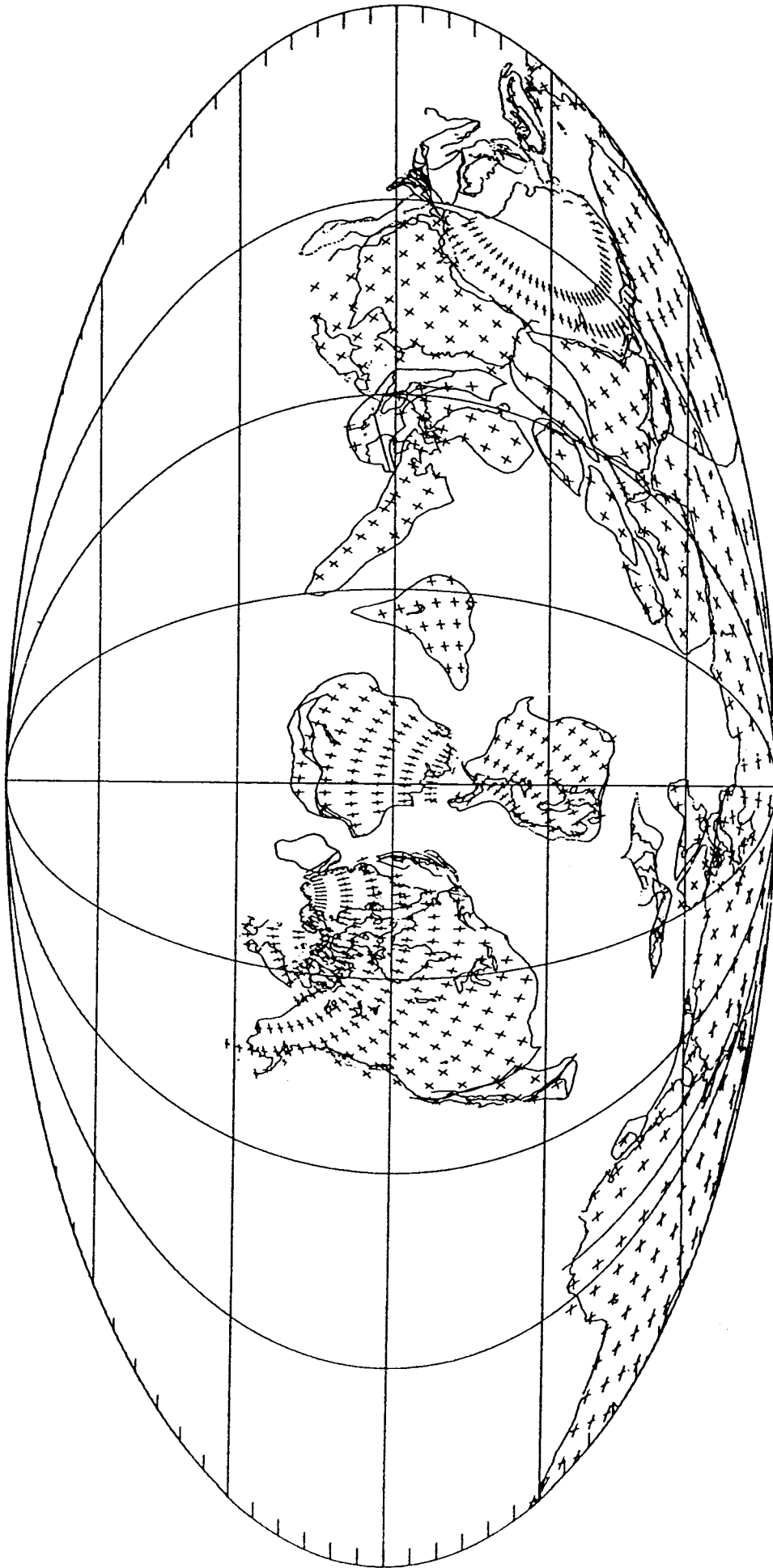
Wenlockian 425 Ma



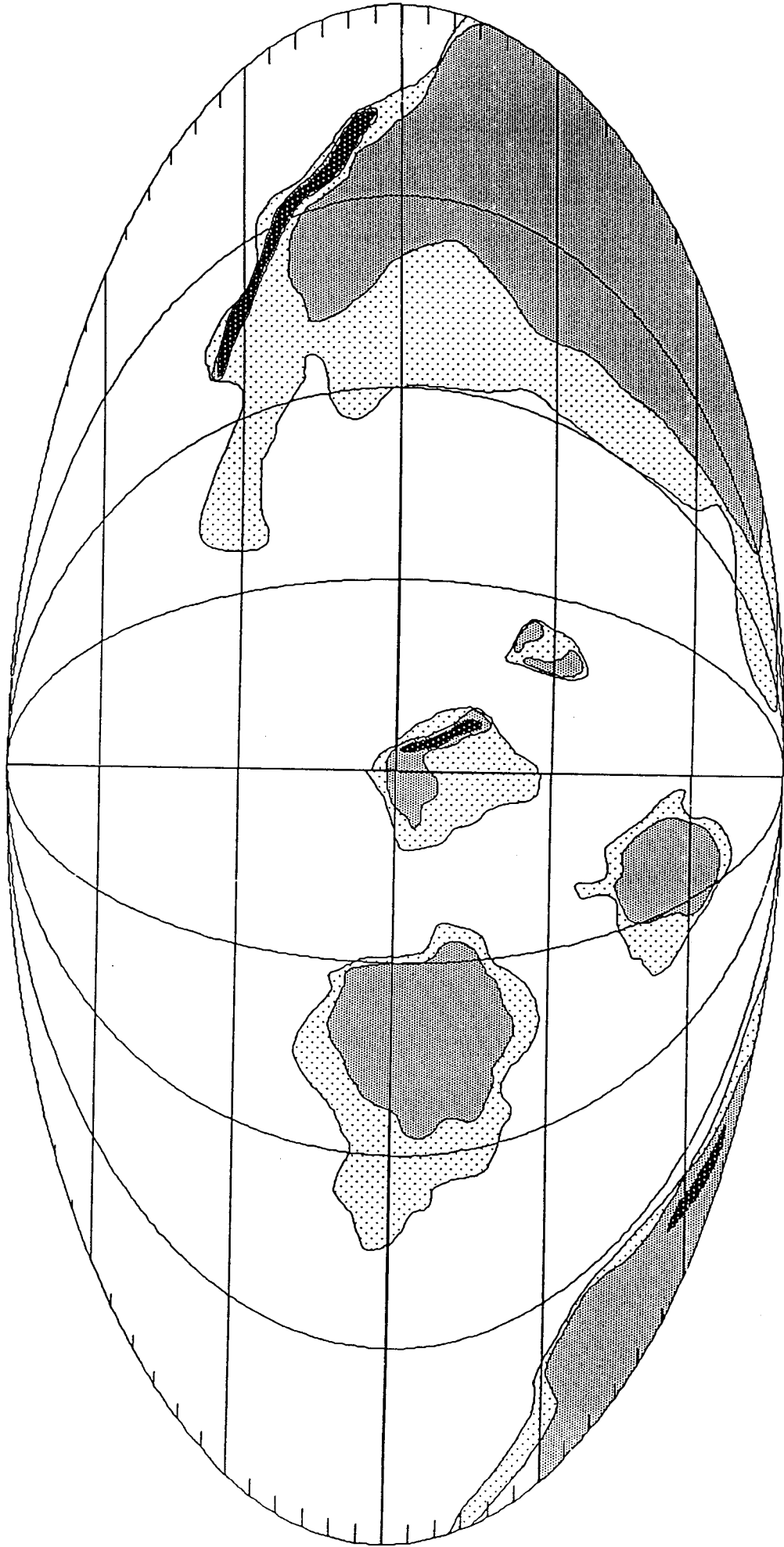
Wenlockian 425 Ma



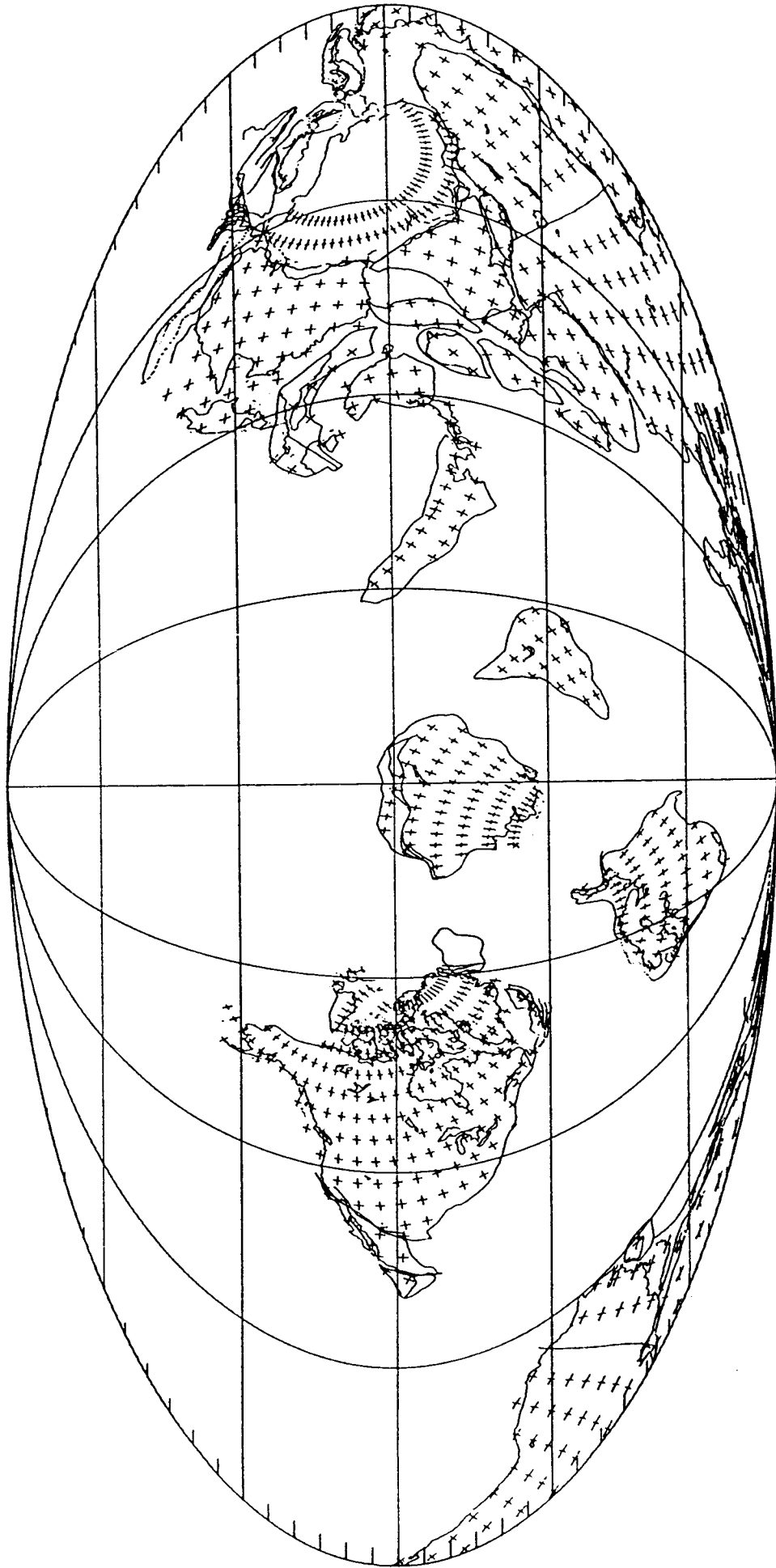
Caradocian-Llandeilan 458 Ma



Caradocian-Llandeilan 458 Ma



Franconian 547 Ma



**Franconian 547 Ma**