

Plate Tectonic Reconstructions
of the Larson et al. (1985)
Map of the Age of the World Oceans

By
L. Gahagan, C.R. Scotese and R. Larson

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Paleoceanographic Mapping Project Report #05-0985

by

Lisa Gahagan and Christopher R. Scotese

The Institute for Geophysics, The University of Texas
Austin, Texas

and

Roger L. Larson

School of Oceanography, University of Rhode Island
Kingston, Rhode Island

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Introduction

During the past 20 years, numerous oceanographic surveys have mapped the age of the ocean floor in great detail (NGDC data bank). Recently, two separate studies have compiled these results and have produced maps illustrating the age of the ocean basins on a global scale (Sclater and Parsons, 1981; Larson et al., 1985). This work has been done with the realization that in order to make accurate plate tectonic reconstructions, an accurate map of the age of the ocean floor is required. This report compares these two compilations and presents a new set of Mesozoic and Cenozoic plate reconstructions based on the magnetic isochrons of Larson et al. (1985).

A Comparison of the Sclater and Parsons (1980) and Larson et al. (1985) Isochron Maps.

Figures 1. and 2. are reduced versions of the Sclater and Parson (1980) and Larson et al. (1985) isochron maps. In Figure 3, these two data sets have been directly overlaid. Though the choice of different times for the isochrons used on each map makes direct comparison difficult, a few points can be made.

Similarities:

1. The pattern in the North, Central, and South Atlantic Oceans are very similar.
2. The treatment of the younger anomalies along the Southwest Indian Ridge is identical because both maps are based on the work of Sclater and Fisher, 1981.
3. The pattern in the Central Indian Ocean is similar due to the fact both groups base their interpretations on the work of Sclater and McKenzie (1971).
4. The pattern in the Eastern Pacific, as portrayed on both maps is fairly similar.

Differences:

(Overall)

1. The Sclater and Parsons (1980) compilation was finished before two important sources of new information were available: 1. the GEBCO bathymetric maps of the world oceans (published 1983), and 2. the exciting new results from SEASAT (Haxby et al., 1983). Many of the differences between these two maps are due to the fact that the more recent Larson et al. (1985) isochron map has incorporated data from these two sources.

2. The method in which the maps were made has also resulted in important differences. The Larson et al. (1985) isochron map was made by directly mapping the age of the ocean floor from existing pattern magnetic anomalies. Where no data were available, the boundaries of the isochrons were estimated. The Sclater and Parsons (1980) map on the other hand is based largely on plate tectonic models for each ocean basin. The isochrons were derived by rotating ridge axes about poles of rotation that "best fit" the observed magnetic lineations.

(Atlantic)

1. The Larson et al. (1985) map takes into account the evolution of the Jan Mayen micro-continent.

2. The Sclater and Parsons (1980) map does not show the correct position of the Charlie-Gibbs fracture zone.

3. The Larson et al. (1985) map correctly takes into account the ridge jump in the Cape Basin (SW Africa); the Sclater and Parsons map does not.

(Indian)

1. Both maps show very different patterns for the isochrons that represent the early stages of rifting between India and Antarctica. (Both are likely to be incorrect.)

2. The Larson et al. (1985) map indicates that sea floor spreading in the Mozambique and Somali Basins ended at anomaly M10 time. More likely, it continued to anomaly M0 time.

3. On the Sclater and Parsons (1980) map the Prince Edward Fracture Zone (Southwest Indian Ridge) is shown to be a nearly continuous feature. The Larson et al. (1985) map suggests that the feature is discontinuous and has been interrupted by a phase of oblique spreading.

4. The Larson et al. (1985) map includes the work of Cande and Mutter (1982) which suggests Australia and Antarctica parted company in the Late Cretaceous.

5. The Sclater and Parsons (1980) map shows a small back arc basin opening between the Campbell plateau and the Macquarie Ridge.

6. The magnetic anomalies in the Weddell Sea run N-NW on the Sclater and Parsons map, whereas they run nearly E-W on the Larson et al. (1985) map. It is not clear which of these two interpretations are correct.

(Pacific)

1. Neither compilation uses the more recent work of Klitgord and Mammerickx (1982) and Lonsdale and Klitgord (1981) for the Eastern Pacific.

2. The locations of the major fracture zones, as shown on the Sclater and Parson's map, are displaced 1-2 degrees from their actual positions.
3. The maps do not agree on the shape of the isochrons on the Nazca plate.
4. The shape of the isochrons in the Southwest Pacific at 170 W are very different. On the Sclater and Parsons (1981) map the fracture zones trend more N-S.

Discussion

A comparison of the two maps suggests that though similar, there are important differences. The most significant differences are summarized by the following list of "problem areas".

1. The evolution of the Jan Mayen microplate.
- 2*. The Late Jurassic -Early Cretaceous evolution of the Somali and Mozambique basins.
- 3*. The Evolution of the Southwest Indian Ridge in the vicinity of the Prince Edward Fracture Zone.
- 4*. The early rifting history between India and Antarctica.
- 5*. The evolution of the Weddell Sea.
- 6*. The evolution of the SW Pacific .
7. The evolution of the Nazca plate.

* indicates that special projects are underway to solve the problems in these areas.

Plate Tectonic Reconstructions of the Larson et al. (1985) Isochron Map

The reconstructions illustrated in Figures 4 - 12 attempt to "best fit" the isochrons drawn by Larson et al. (1985). In the first phase of the project, the isochrons were digitized and converted to spherical coordinates. Finite poles of rotation (see Appendix) were then calculated through the use of interactive computer graphics (Evans and Sutherland PS300). Maps were then plotted using the program PALEOMAP.

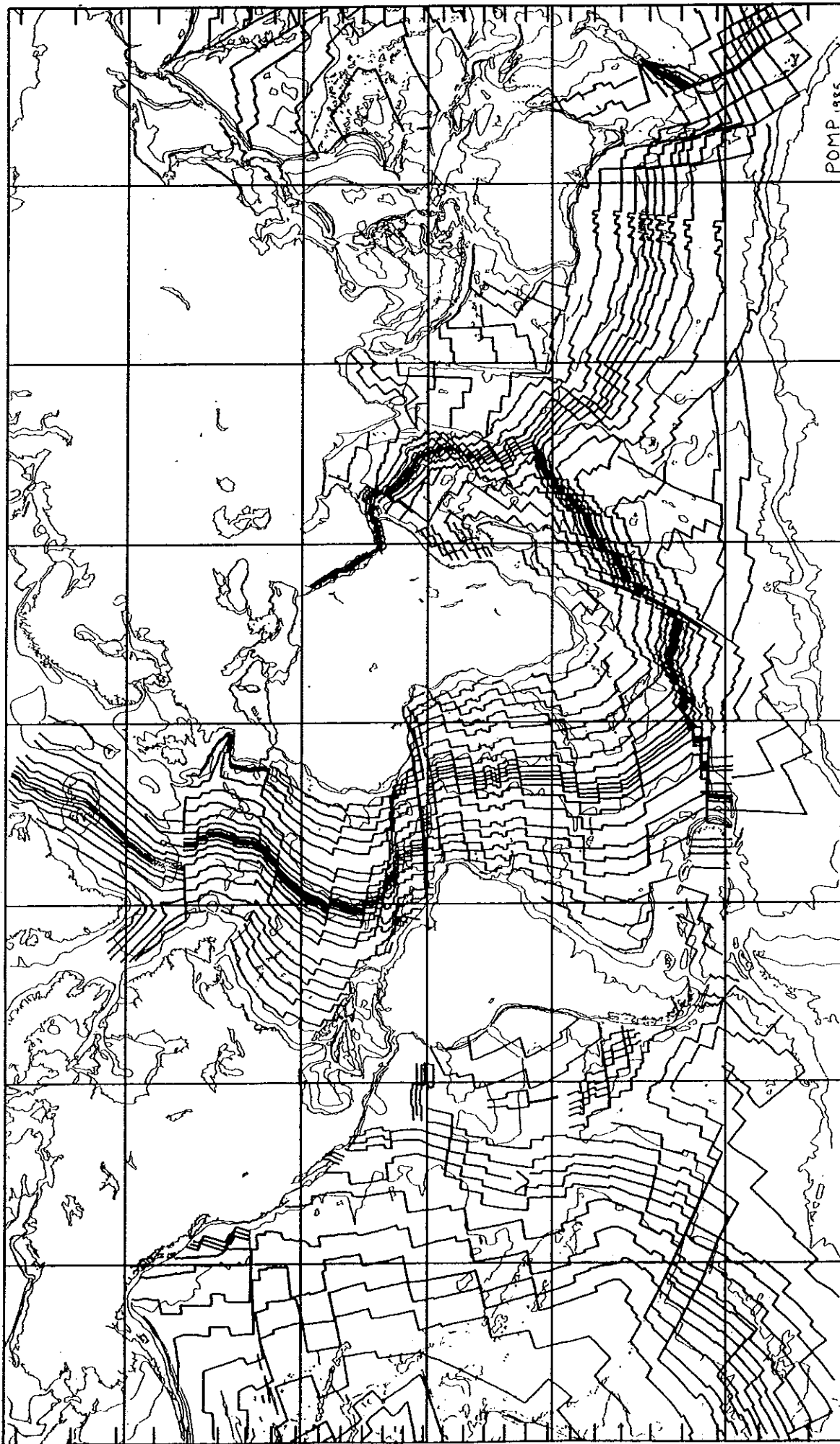


Figure 1. Sclater and Parsons (1980) Isochron Map

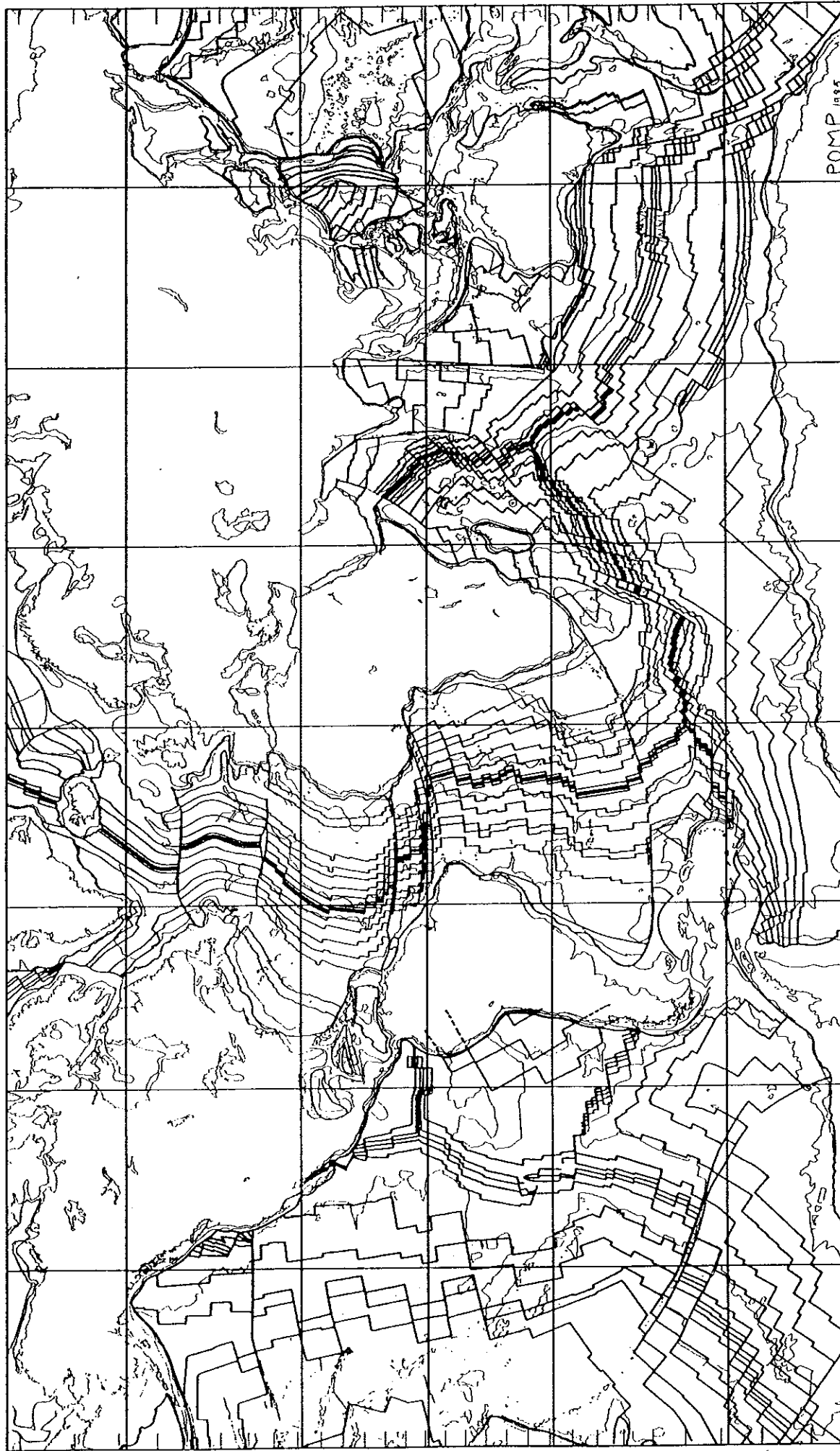


Figure 2. Larson et al. (1985) Isochron Map

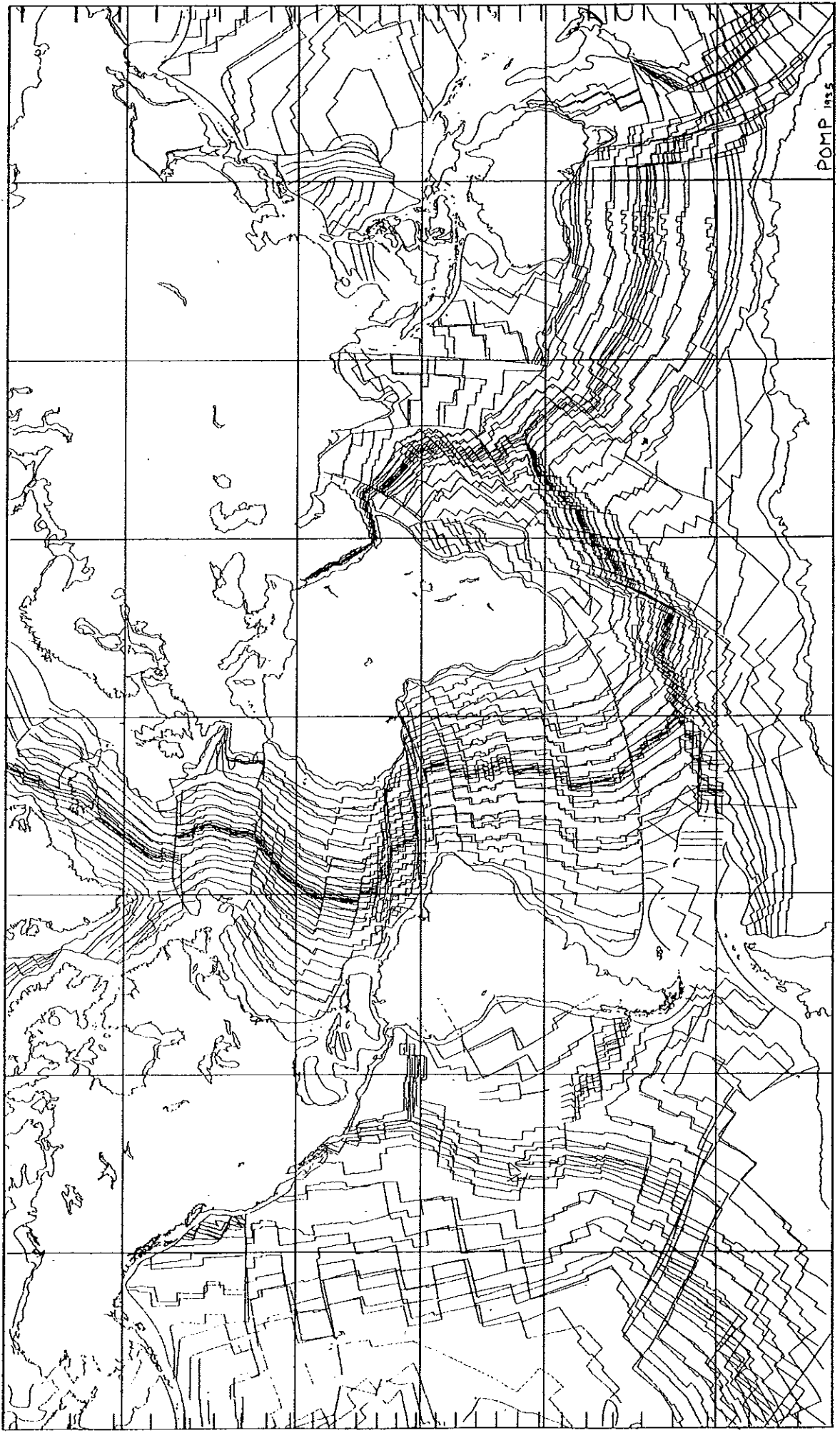
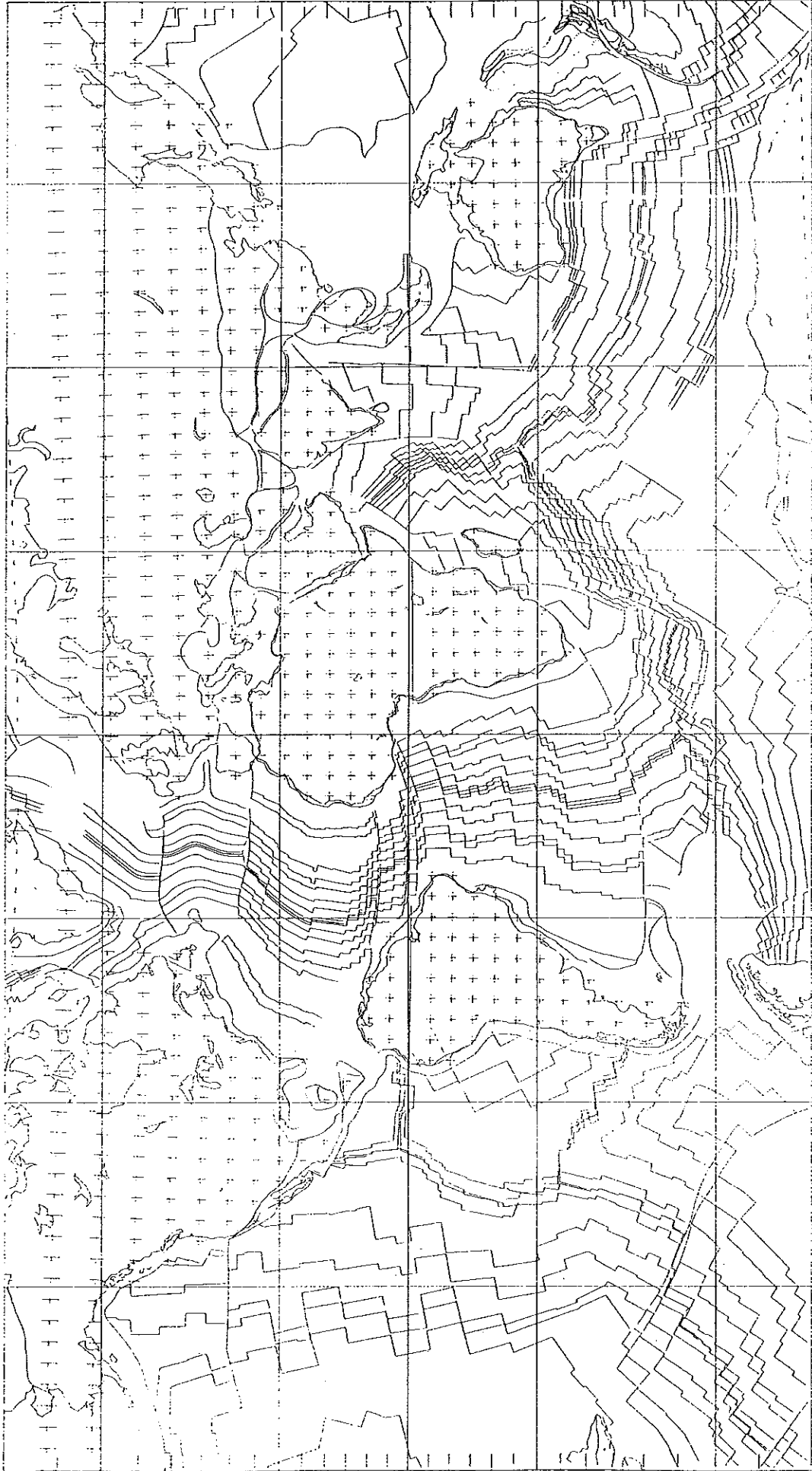


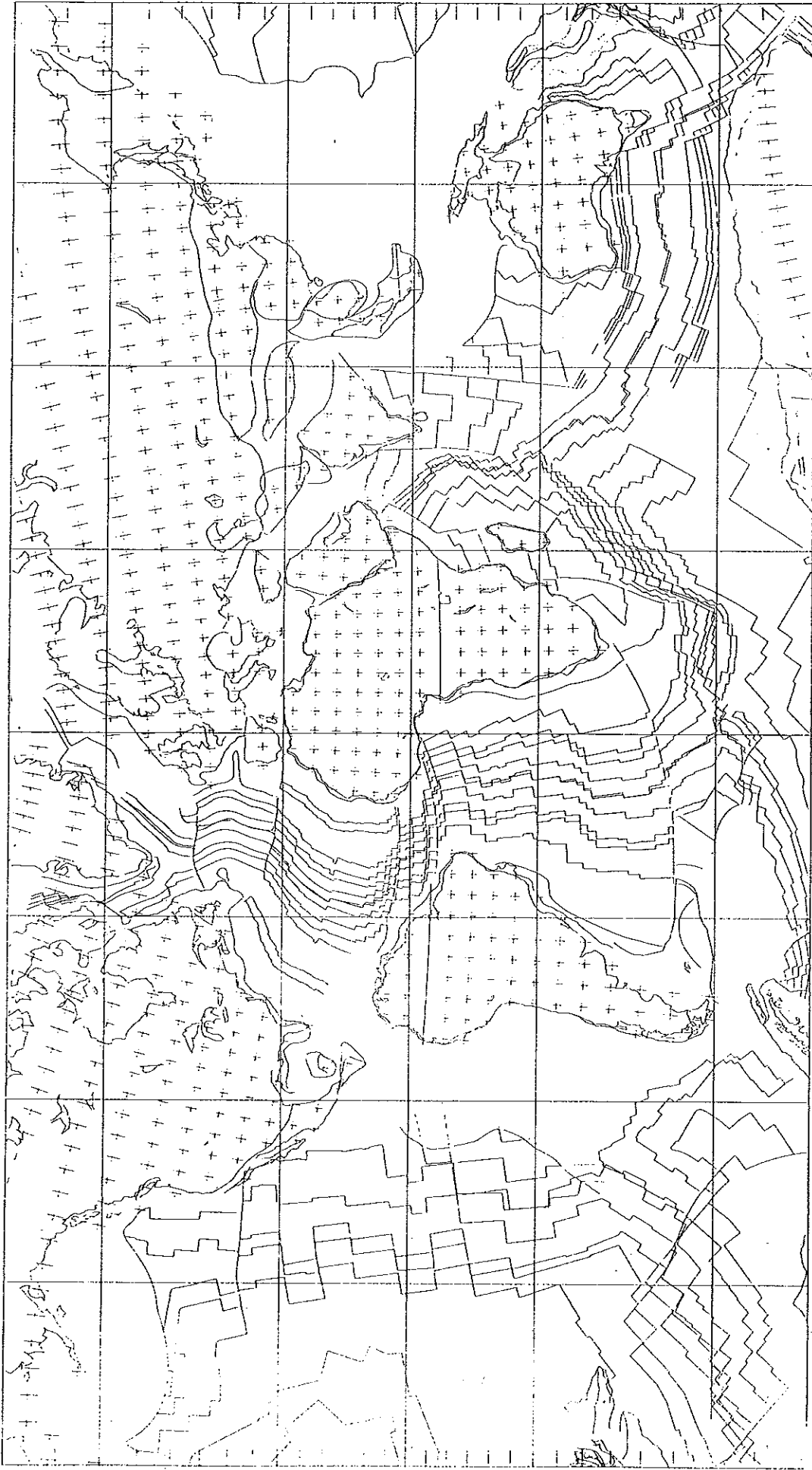
Figure 3. Sclater and Parsons (1980) and Larson et al. (1985) Isochrons combined

AN 02



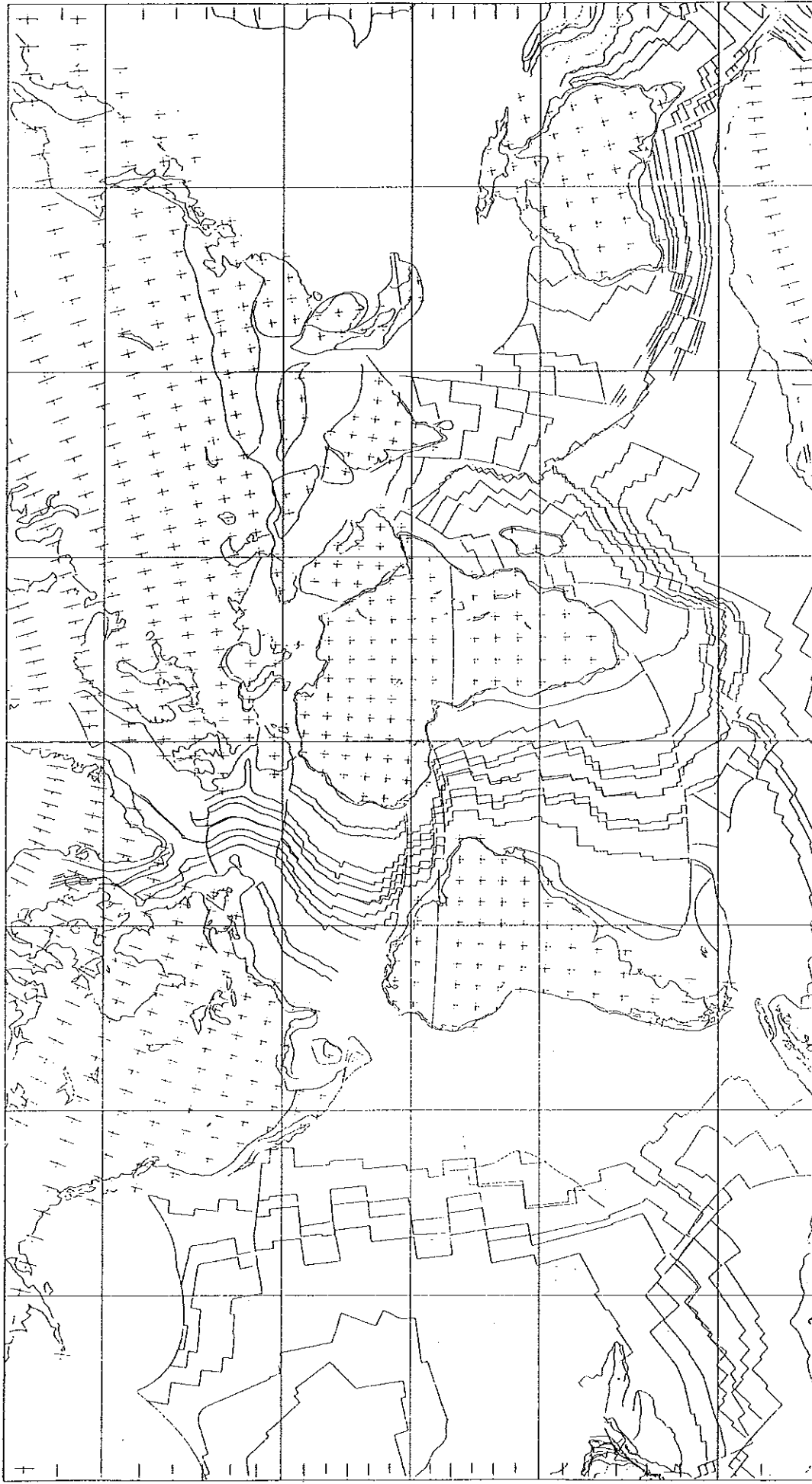
POMP 09/85

AN 06



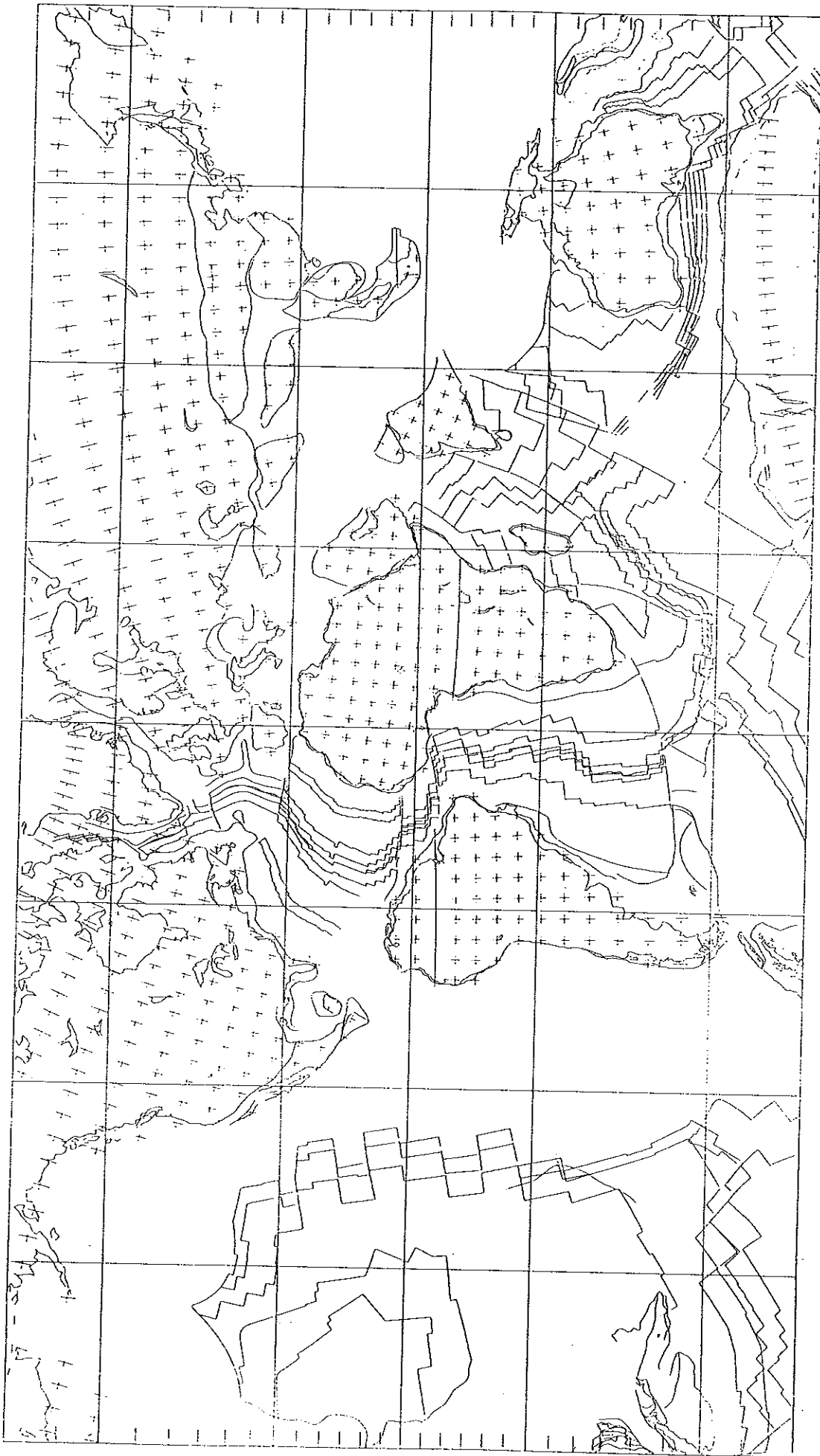
POMP 09/85

AN 15



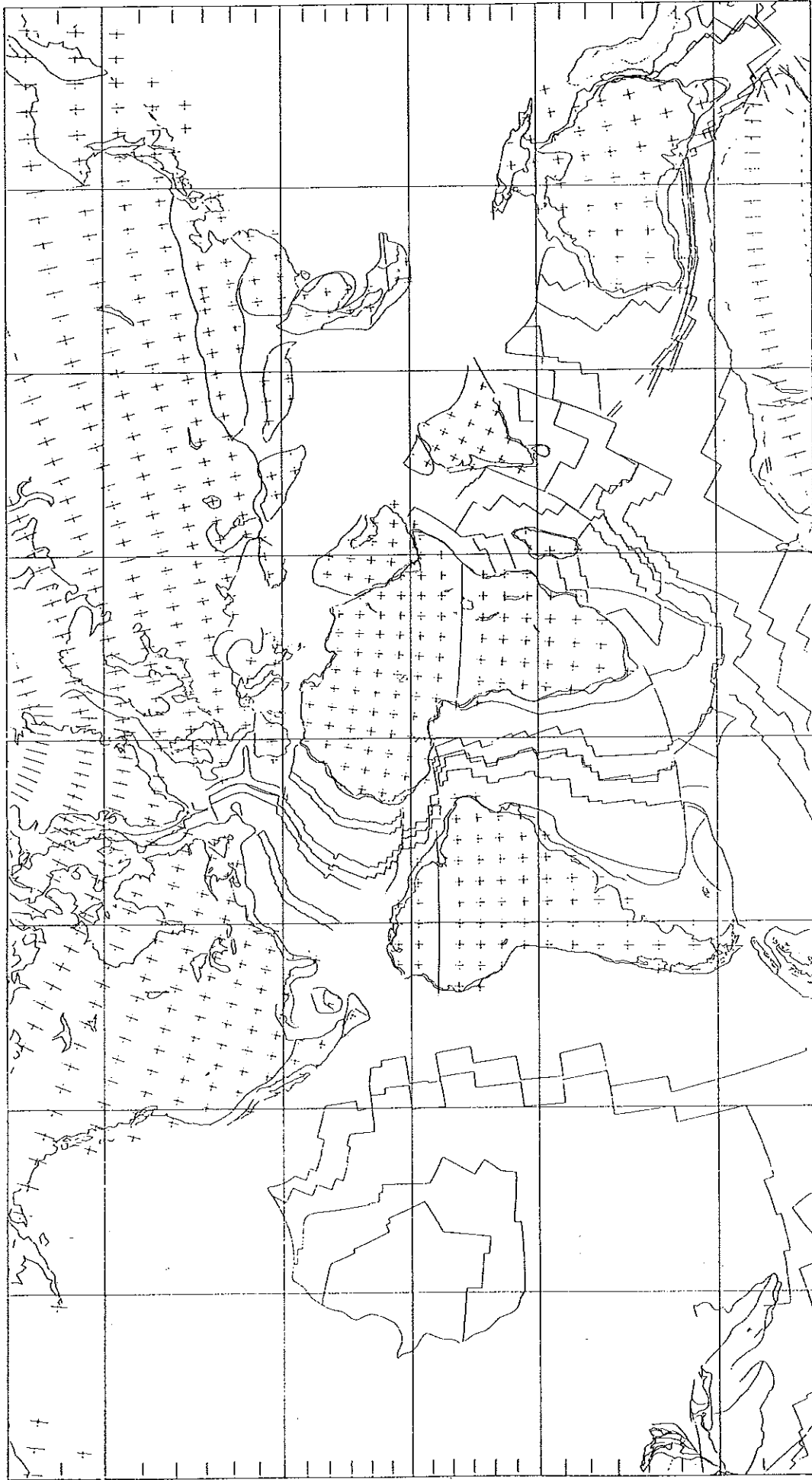
POMP 09/85

AN 25



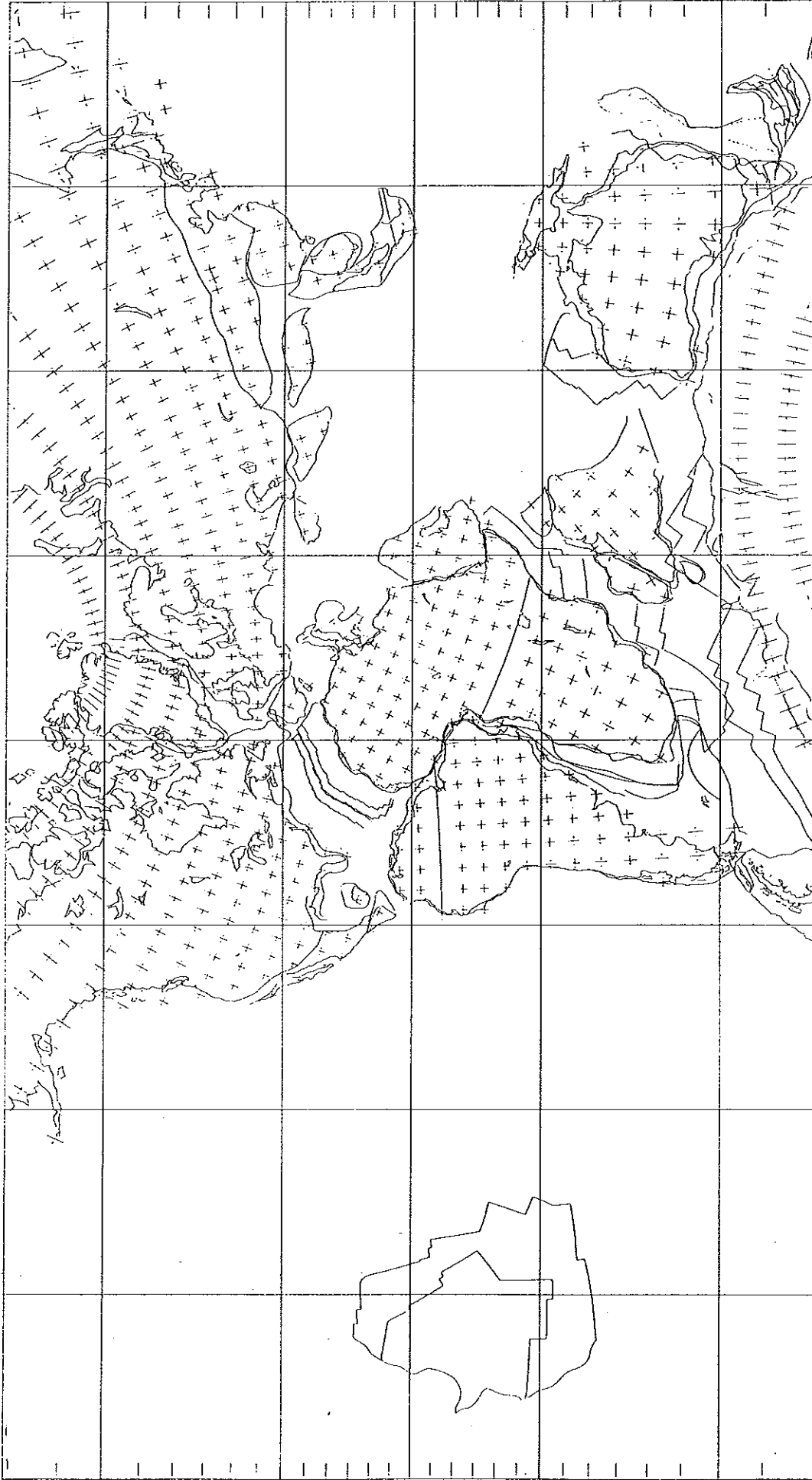
POMP 09/85

AN 29



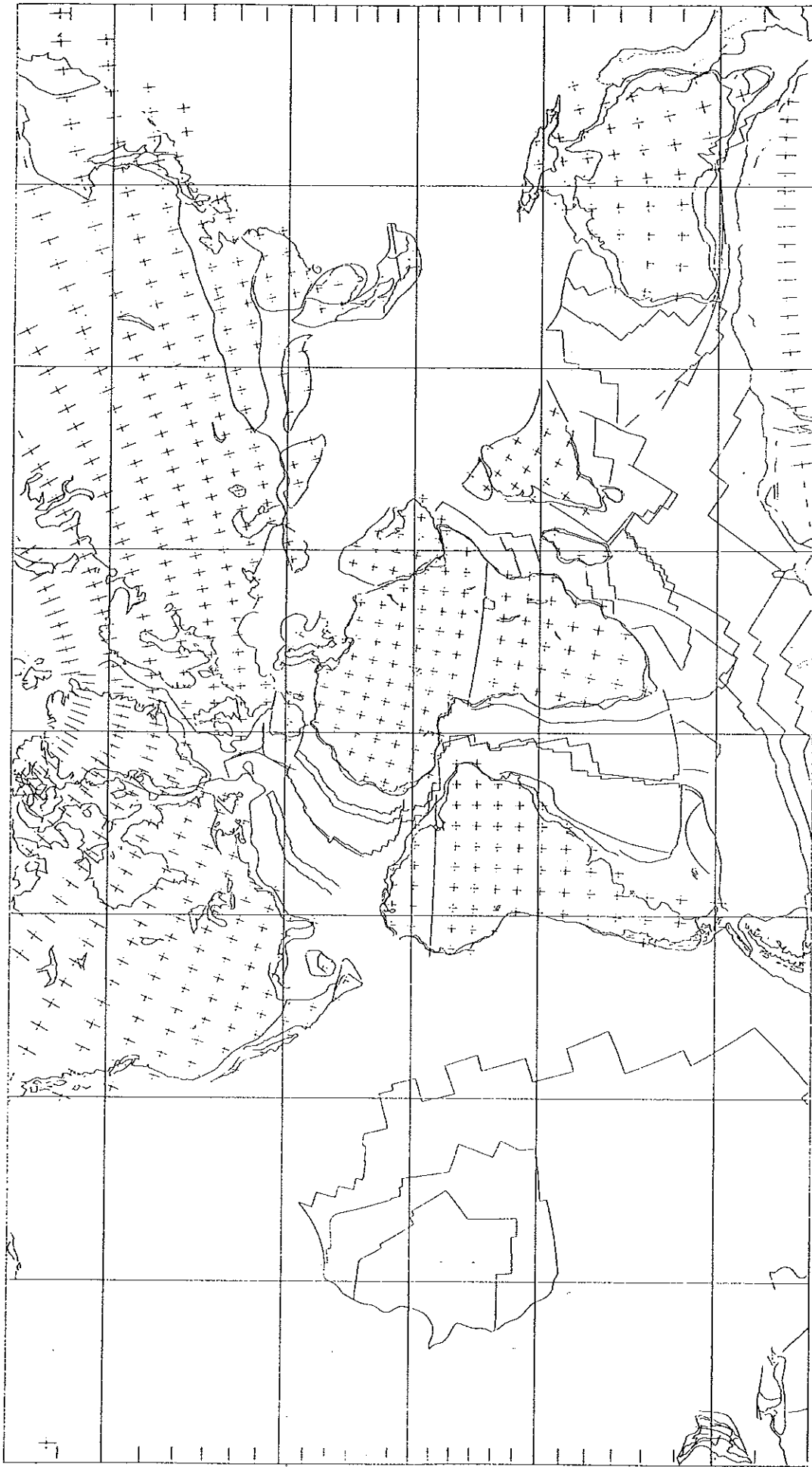
POMP 09/85

M 17



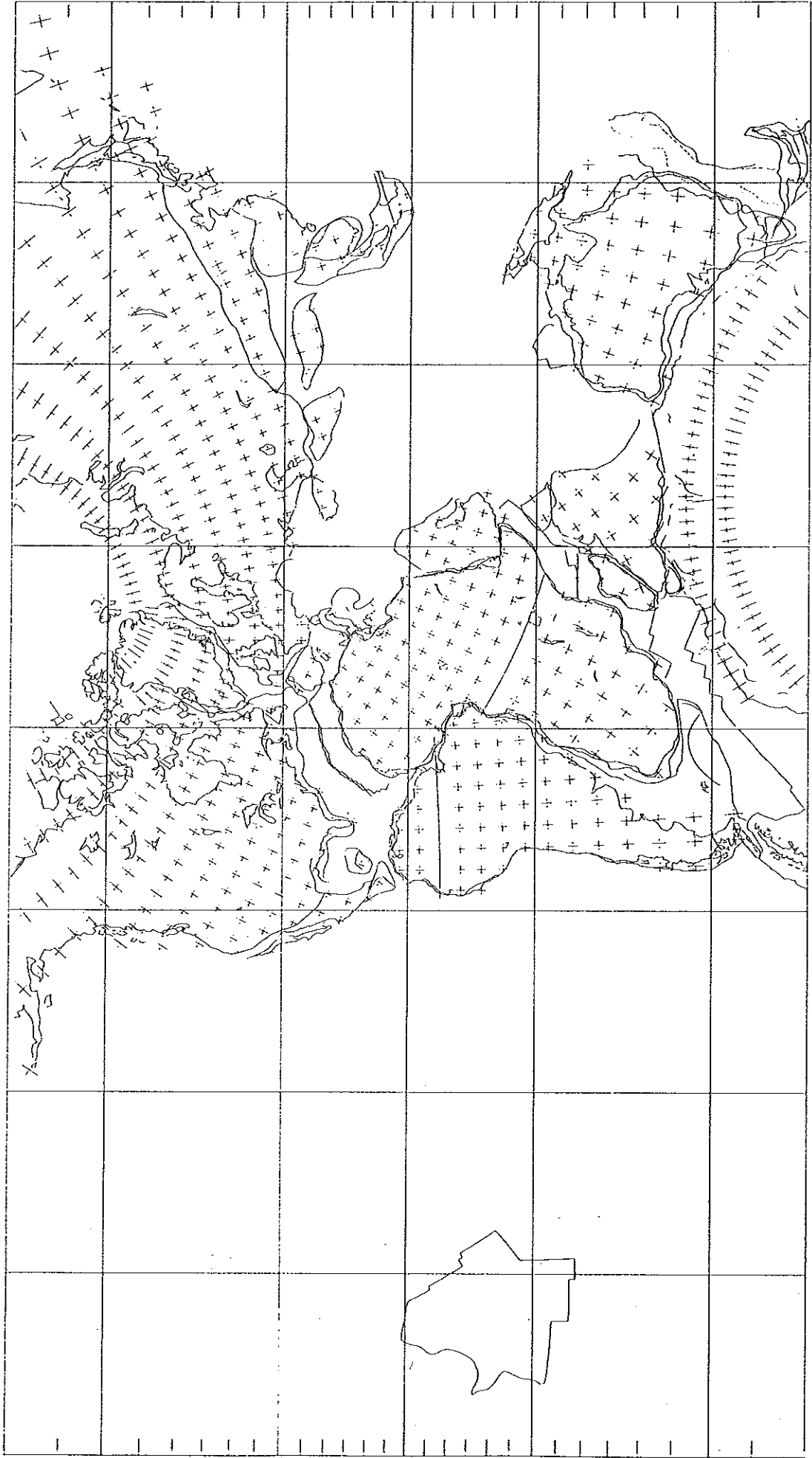
POMP 09/85

AN 34



POMP 09/85

M O



POMP 09/85

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701	000.0	0.00	0.00	0.00	000	!LAST MODIFIED: 12/17/85
701	014.0	0.00	92.00	5.00	000	!COPYRIGHT 1985
701	044.0	0.00	113.00	12.00	000	!PALEOCEANOGRAPHIC MAPPING PROJECT
701	060.0	0.00	126.00	10.00	000	
701	075.0	0.00	129.00	17.00	000	
701	093.0	0.00	151.00	20.00	000	!100 MY INTO FUTURE
701	131.0	0.00	156.00	35.00	000	!FMAG DATA
701	175.0	0.00	166.00	36.00	000	!ZIEGLER, SCOTESE, & BARRETT (1983)
701	192.0	0.00	172.00	31.00	000	!GLOBAL MEAN POLE IN AFRICAN COORDINATES
701	215.0	0.00	145.00	27.00	000	
701	240.0	0.00	144.00	37.00	000	
701	255.0	0.00	152.00	50.00	000	
101	-100	70.50	-18.70	-27.00	701	!NAM-AFR, 100 MY INTO FUTURE
101	0.0	0.00	0.00	0.00	701	!NAM-AFR
101	3.4	80.44	56.37	0.37	701	!NAM-AFR AN2
101	24.2	80.43	56.36	5.37	701	!NAM-AFR AN6
101	37.7	77.61	7.21	10.63	701	!NAM-AFR AN15
101	59.2	79.10	07.07	17.05	701	!NAM-AFR AN25
101	66.2	80.59	-14.76	22.50	701	!NAM-AFR AN29
101	84.0	78.35	-12.13	28.52	701	!NAM-AFR AN34
101	118.7	66.41	-19.61	54.12	701	!NAM-AFR ANM0
101	132.0	67.07	-18.05	58.59	701	!
101	148.0	66.56	-17.18	63.22	701	
101	172.0	62.20	-15.90	78.80	701	!M. KELLY, PERS. COMM. (1979)
101	245.0	62.20	-15.90	78.80	701	!M. KELLY, PERS. COMM. (1979)
301	-100	63.10	142.10	19.20	101	!EUR-NAM, 100 MY FUTURE
301	0.0	0.00	0.00	0.00	101	!EUR-NAM
301	3.4	65.85	132.44	-0.43	101	!EUR-NAM AN2
301	24.2	30.43	141.70	-4.25	101	!EUR-NAM AN6
301	37.7	73.30	130.30	-9.01	101	!EUR-NAM AN15
301	59.2	43.50	145.40	-12.39	101	!E-N AN25 S. OF C. GIBBS FZ ONLY
301	66.2	65.43	147.96	-16.35	101	!EUR-NAM AN29
301	84.0	65.83	157.15	-19.33	101	!EUR-NAM AN34
301	92.0	84.40	146.60	-29.20	101	!EUR-NAM FIT
301	245.0	84.40	146.60	-29.2	101	!SCLATER ET AL (1977)
304	-100	50.00	3.30	-27.00	301	!SPN-EUR, 100 MY FUTURE
304	0.0	0.00	0.00	0.00	301	!SPN-EUR
304	66.2	0.00	0.00	0.00	301	!SPN-EUR AN29
304	84.0	-46.22	-174.65	5.05	301	!SPN-EUR AN34
304	92.0	50.00	3.30	-27.00	301	!SPN-EUR FIT
304	245.0	50.00	3.30	-27.00	301	!SIBUET (1970)
102	-100	0.00	0.00	0.00	101	!GRN-NAM, 100 MY FUTURE
102	0.0	0.00	0.00	0.00	101	!GRN-NAM
102	36.6	0.00	0.00	0.00	101	!GRN-NAM, LABRADOR SFS STOPS
102	59.2	-16.26	28.48	2.37	101	!GRN-NAM AN25
102	66.2	-41.70	35.94	5.14	101	!GRN-NAM AN29
102	84.0	-39.63	30.94	7.91	101	!GRN-NAM AN34
102	92.0	70.30	-93.80	-17.90	101	!GRN-NAM FIT
102	245.0	70.30	-93.80	-17.90	101	!GRN-NAM FIT, SCLATER ET AL (1977)
201	-100	67.30	-39.60	-41.00	701	!SAM-AFR, 100 MY INTO FUTURE
201	0.0	0.00	0.00	0.00	701	!SAM-AFR
201	3.4	68.75	-41.47	0.62	701	!SAM-AFR AN2
201	24.2	52.67	-31.64	7.71	701	!SAM-AFR AN6
201	37.7	55.85	-32.83	14.32	701	!SAM-AFR AN15
201	59.2	55.85	-32.83	21.62	701	!SAM-AFR AN25
201	66.2	55.85	-32.83	24.96	701	!SAM-AFR AN29
201	84.0	59.77	-35.40	33.13	701	!SAM-AFR AN34
201	118.7	48.82	-32.90	52.34	701	!SAM-AFR ANM0
201	138.0	45.50	-32.20	58.20	701	!SAM-AFR FIT SCOTESE & LAWVER (1986)
201	245.0	45.50	-32.20	58.20	701	!SIMILAR TO RABINOWITZ & LABREQUE (1979)
501	-100	15.00	40.00	5.00	701	!IND-ANT, 100 MY INTO FUTURE
501	0.0	0.00	0.00	0.00	701	!IND-AFR
501	3.4	32.80	25.91	-1.22	701	!IND-AFR AN2
501	24.2	17.27	46.02	-12.23	701	!IND-AFR AN6
501	37.7	-15.25	-135.09	19.82	701	!IND-AFR AN15
501	59.2	12.26	41.35	-35.02	701	!IND-AFR AN25
501	66.2	12.35	33.79	-43.33	701	!IND-AFR AN29
501	84.0	17.58	27.42	-53.04	701	!IND-AFR AN34
501	92.0	21.28	25.76	-57.66	701	!IND-AFR SWITCH OVER
501	92.0	21.28	25.76	-57.66	702	!IND-MAD FIT
501	245.0	21.28	25.76	-57.66	702	!SCOTESE AND LAWVER (1986)
702	-100	0.00	0.00	0.00	701	!MAD-AFR, 100 MY INTO FUTURE
702	0.0	0.00	0.00	0.00	701	!MAD-AFR
702	118.7	0.00	0.00	0.00	701	!MAD-AFR AN34
702	165.0	-3.41	-81.70	19.73	701	!MAD-AFR FIT
702	245.0	-3.41	-81.70	19.73	701	!SCOTESE AND LAWVER (1986)
802	-100	5.80	-37.20	-20.00	701	!ANT-AFR, 100 MY INTO FUTURE
802	0.0	0.00	0.00	0.00	701	!ANT-AFR
802	3.4	18.55	-36.41	0.33	701	!ANT-AFR AN2
802	24.2	9.46	-41.70	3.34	701	!ANT-AFR AN6
802	37.7	8.73	-36.52	5.93	701	!ANT-AFR AN15

802	59.2	-0.86	-24.52	10.98	701	!ANT-AFR	AN25
802	66.2	0.13	-26.58	13.23	701	!ANT-AFR	AN29
802	84.0	0.08	-31.68	18.98	701	!ANT-AFR	AN34
802	84.0	7.88	14.80	64.34	501	!ANT-INDIA	AN 34
802	130.0	-4.44	16.74	92.77	501	!ANT-INDIA	FIT
802	245.0	-4.44	16.74	92.77	501	!SCOTESE	AND LAWVER (1986)
801	-100	0.00	0.00	0.00	501	!AUS-IND	100 MY FUTURE
801	0.0	0.00	0.00	0.00	501	!AUS-IND	
801	37.7	0.00	0.00	0.00	501	!AUS-IND	AN15
801	37.7	-13.70	-151.21	21.69	802	!AUS-ANT	AN15
801	59.2	-15.91	-150.80	25.36	802	!AUS-ANT	AN25
801	66.2	-2.42	-144.30	26.49	802	!AUS-ANT	AN29
801	84.0	-2.42	-144.30	27.91	802	!AUS-ANT	AN34
801	165.0	-1.58	39.02	-31.29	802	!AUS-ANT	FIT
801	245.0	-1.58	39.02	-31.29	802	!SCOTESE	AND LAWVER (1986)
901	-100	70.00	-100.00	-60.00	804	!PAC-MBL	100 MY FUTURE (GUESS)
901	0.0	0.00	0.00	0.00	804	!PAC-MBL	
901	3.4	68.71	-98.50	1.08	804	!PAC-MBL	AN2
901	24.2	73.35	-62.84	16.62	804	!PAC-MBL	AN6
901	37.7	74.97	-53.67	28.96	804	!PAC-MBL	AN15
901	59.2	-72.79	127.36	-40.06	804	!PAC-MBL	AN25
901	66.2	69.48	-36.51	59.31	804	!PAC-MBL	
901	84.0	65.14	-52.00	62.38	804	!SCOTESE	& LAWVER (1986)
901	245.0	65.14	-52.00	62.38	804	!PAC-MBL	
902	-100	50.00	-95.00	70.00	901	!NAZ-PAC	100 MY FUTURE (GUESS)
902	0.0	0.00	0.00	0.00	901	!NAZ-PAC	
902	3.4	53.01	-93.69	-3.58	901	!NAZ-PAC	AN2
902	24.2	60.85	-89.37	-38.91	901	!NAZ-PAC	AN6
902	37.7	69.20	-99.53	-51.78	901	!NAZ-PAC	AN15
902	59.2	78.84	-119.82	-69.20	901	!NAZ-PAC	AN25
909	-100	39.00	10.00	30.00	901	!COC-PAC	100 MY FUTURE (GUESS)
909	0.0	0.00	0.00	0.00	901	!COC-PAC	
909	3.4	38.72	-107.39	-3.96	901	!MINSTER	INSTANT POLE,COC-PAC AN2
503	-100	0.00	0.00	0.00	701	!ARB-AFR	100 MY FUTURE
503	0.0	0.00	0.00	0.00	701	!ARB-AFR	
503	25.0	26.50	21.50	-7.60	701	!ARB-AFR	NORTON & SCLATER (1979)
503	245.0	26.50	21.50	-7.60	701	!ARB-AFR	NORTON & SCLATER (1979)
506	-100	0.00	0.00	0.00	501	!AFG-IND	100 MY FUTURE
506	0.0	0.00	0.00	0.00	501	!AFG-IND	
506	245.0	0.00	0.00	0.00	501	!AFG-IND	
803	-100	0.00	0.00	0.00	201	!WAP-SAM	100 MY FUTURE
803	000.0	0.00	0.00	0.00	201	!WAP-SAM	
803	010.0	0.00	0.00	0.00	201	!BASED ON	SCOTESE (1982)
803	020.0	-66.70	-74.30	10.00	201	!COMPUTER	ANIMATION OF
803	029.0	-81.50	-146.30	13.70	201	!BREAKUP	OF GONDWANA
803	110.0	-68.80	-86.90	39.30	201	!WAP-SAM	
803	120.0	-60.97	-169.98	15.00	201	!WAP-SAM	
803	140.0	-66.90	-92.80	25.20	201	!WAP-SAM	
803	165.0	-64.24	-75.64	91.09	201	!WAP-SAM	FIT
803	245.0	-64.24	-75.64	91.09	201	!SCOTESE	AND LAWVER (1986)
804	-100	0.00	0.00	0.00	802	!MBL-ANT	100 MY FUTURE
804	000.0	0.00	0.00	0.00	802	!MBL-ANT	
804	059.2	0.00	0.00	0.00	802	!MBL-ANT	
804	065.0	62.27	21.84	13.27	802	!MBL-ANT	FIT
804	245.0	62.27	21.84	13.27	802	!SCOTESE	AND LAWVER (1986)
805	-100	0.00	0.00	0.00	201	!ELL-SAM	100 MY FUTURE
805	000.0	0.00	0.00	0.00	201	!SAME AS	WAP-SAM
805	010.0	0.00	0.00	0.00	201	!ELL-SAM	
805	020.0	-66.70	-74.30	10.00	201	!ELL-SAM	
805	029.0	-81.50	-146.30	13.70	201	!ELL-SAM	
805	110.0	-68.80	-86.90	39.30	201	!ELL-SAM	
805	120.0	-60.97	-169.98	15.00	201	!ELL-SAM	
805	140.0	-66.90	-92.80	25.20	201	!ELL-SAM	
805	165.0	-63.81	-79.40	87.02	201	!ELL-SAM	FIT
805	245.0	-63.81	-79.40	87.02	201	!SCOTESE	& LAWVER (1986)
103	-100	0.00	0.00	0.00	101	!NSL-NAM	100 MY FUTURE
103	000.0	0.00	0.00	0.00	101	!NSL-NAM	
103	131.0	0.00	0.00	0.00	101	!NSL-NAM	
103	165.0	70.11	-128.16	-75.00	101	!NSL-NAM	FIT
103	245.0	70.11	-128.16	-75.00	101	!ROUCHER	(1978)
104	-100	0.00	0.00	0.00	101	!MEX-NAM	100 MY FUTURE
104	000.0	0.00	0.00	0.00	101	!MEX-NAM	
104	143.0	0.00	0.00	0.00	101	!MEX-NAM	
104	165.0	-48.60	94.10	13.00	101	!MEX-NAM	FIT
104	245.0	-48.60	94.10	13.00	101	!ZIEGLER,	SCOTESE, & BARRETT (1983)
105	-100	46.60	-95.60	-20.00	104	!BAJ-MEX	100 MY FUTURE
105	000.0	0.00	0.00	0.00	104	!BAJ-MEX	
105	032.0	37.90	-91.30	7.37	104	!BAJ-MEX	FIT
105	245.0	37.90	-91.30	7.37	104	!MODIFIED	SCOTESE ET AL (1979)
403	-100	0.00	0.00	0.00	301	!KOL-EUR	100 MY FUTURE
403	000.0	0.00	0.00	0.00	301	!KOL-EUR	
403	140.0	0.00	0.00	0.00	301	!KOL-EUR	

403	165.0	80.00	100.00	20.00	301	!KOL-EUR
403	245.0	80.00	100.00	25.00	301	!KOL-EUR
205	-100	0.00	0.00	0.00	101	!YUC-NAM , 100 MY FUTURE
205	000.0	0.00	0.00	0.00	101	!YUC-NAM
205	143.0	0.00	0.00	0.00	101	!YUC-NAM
205	165.0	27.60	-85.50	-66.80	101	!YUC-NAM FIT
205	245.0	27.60	-85.50	-66.80	101	!ZIEGLER, SCOTESE & BARRETT (1983)
204	-100	0.00	0.00	0.00	104	!HON-MEX, 100 MY FUTURE
204	000.0	0.00	0.00	0.00	104	!HON-MEX
204	053.0	-39.70	87.90	15.10	104	!HON-MEX
204	127.0	-39.70	87.90	15.10	104	!HON-MEX
204	165.0	-39.70	87.90	31.10	104	!HON-MEX FIT
204	245.0	-39.70	87.90	31.10	104	!SCOTESE ET AL (1979)
106	-100	0.00	0.00	0.00	102	!ARC-GRN , 100 MY FUTURE
106	245.0	0.00	0.00	0.00	102	!KEPT FIXED TO GREENLAND
317	-100	0.00	0.00	0.00	301	!ERK-EUR, 100 MY FUTURE
317	000.0	0.00	0.00	0.00	301	!ERK-EUR
317	073.0	0.00	0.00	0.00	301	!ERK-EUR
317	095.0	3.60	96.80	3.70	301	!ERK-EUR FIT
317	245.0	73.60	96.80	3.70	301	!SCOTESE (1976)
806	-100	0.00	0.00	0.00	801	!NNZ-AUS, 100 MY FUTURE
806	000.0	0.00	0.00	0.00	801	!NNZ-AUS
806	060.0	0.00	0.00	0.00	801	!NNZ-AUS
806	065.0	31.20	136.90	-4.00	801	!NNZ-AUS
806	080.0	43.70	126.40	-7.70	801	!NNZ-AUS
806	090.0	24.19	-19.91	44.61	801	!NNZ-AUS FIT
806	245.0	24.19	-19.91	44.61	801	!SCOTESE & LAWVER (1986)
807	-100	0.00	0.00	0.00	804	!SNZ-MBL, 100 MY FUTURE
807	0.0	0.00	0.00	0.00	804	!SNZ-MBL
807	3.4	68.71	-98.50	1.88	804	!SNZ-MBL AN2
807	24.2	73.35	-62.84	16.62	804	!SNZ-MBL AN6
807	37.7	74.97	-53.67	28.96	804	!SNZ-MBL AN15
807	59.2	-72.79	127.36	-40.06	804	!SNZ-MBL AN25
807	66.2	69.48	-34.51	59.31	804	!SNZ-MBL
807	84.0	65.14	-52.00	62.38	804	!SNZ-MBL FIT
807	245.0	65.14	-52.00	62.38	804	!SCOTESE & LAWVER (1986)
605	-100	0.00	0.00	0.00	601	!JAF-NCH, 100 MY INTO FUTURE
605	000.0	0.00	0.00	0.00	601	!JAF-NCH
605	011.0	0.00	0.00	0.00	601	!JAF-NCH
605	023.0	-13.70	-113.40	-7.50	601	!JAF-NCH FIT
605	245.0	-13.70	-113.40	-7.50	601	!SCOTESE (1976)
601	-100	0.00	0.00	0.00	301	!NCH-EUR 100 MY FUTURE
601	000.0	0.00	0.00	0.00	301	!NCH-EUR
601	215.0	0.00	0.00	0.00	301	!NCH-EUR
601	245.0	0.00	0.00	0.00	301	!TEMPORARILY FIXED TO EUROPE
602	-100	0.00	0.00	0.00	601	!SCH-NCH, 100 MY FUTURE
602	213.0	0.00	0.00	0.00	601	!SCH-NCH
602	245.0	0.00	0.00	0.00	601	!TEMPORARILY FIXED TO N CHINA
603	-100	0.00	0.00	0.00	602	!SEA-SCH, 100 MY FUTURE
603	213.0	0.00	0.00	0.00	602	!SEA-SCH
603	245.0	0.00	0.00	0.00	602	!TEMPORARILY FIXED TO S CHINA
604	-100	0.00	0.00	0.00	602	!ICH-SCH, 100 MY FUTURE
604	213.0	0.00	0.00	0.00	602	!ICH-SCH
604	245.0	0.00	0.00	0.00	602	!TEMPORARILY FIXED TO S CHINA
306	-100	0.00	0.00	0.00	304	!CSB-SPN, 100 MY FUTURE
306	006.0	0.00	0.00	0.00	304	!CSB-SPN
306	012.0	-50.85	178.46	26.17	304	!CSB-SPN FIT
306	245.0	-50.85	178.46	26.17	304	!SCOTESE ET AL (1979)
307	-100	0.00	0.00	0.00	301	!ITL-EUR, 100 MY FUTURE
307	000.0	0.00	0.00	0.00	301	!ITL-EUR
307	021.0	0.00	0.00	0.00	301	!ITL-EUR
307	065.0	40.00	7.00	-13.00	301	!ITL-EUR
307	065.0	-45.63	-60.67	5.57	701	!ITL-AFR
307	080.0	47.12	10.85	-20.00	701	!ITL-AFR
307	143.0	47.12	10.85	-41.40	701	!ITL-AFR
307	165.0	-49.21	-167.00	38.04	701	!ITL-AFR
307	165.0	-45.67	-173.30	67.12	304	!ITL-SPN FIT
307	245.0	-45.67	-173.30	67.12	304	!ZIEGLER, SCOTESE, & BARRETT (1983)
504	-100	0.00	0.00	0.00	301	!TRK-EUR, 100 MY FUTURE
504	000.0	0.00	0.00	0.00	301	!TRK-EUR
504	035.0	71.00	95.00	11.00	301	!TRK-EUR
504	190.0	71.00	95.00	11.00	301	!TRK-EUR FIT
504	245.0	-42.60	-151.40	30.00	301	!SCOTESE (1977)
505	-100	0.00	0.00	0.00	504	!IRN-TRK, 100 MY FUTURE
505	245.0	0.00	0.00	0.00	504	!IRAN FIXED TO TURKEY
308	-100	0.00	0.00	0.00	307	!GRK-ITL, 100 MY FUTURE
308	245.0	0.00	0.00	0.00	307	!GREECE FIXED TO ITALY
606	-100	0.00	0.00	0.00	601	!TIB-NCH, 100 MY FUTURE
606	000.0	0.00	0.00	0.00	601	!TIB-NCH
606	038.0	-48.10	-143.60	7.56	601	!TIB-NCH
606	215.0	-48.10	-143.60	7.56	601	!TIB-NCH
606	245.0	-59.70	-145.10	71.47	601	!SCOTESE (1977)

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502	-100	0.00	0.00	0.00	501	!CEY-IND, 100 MY FUTURE
502	000.0	0.00	0.00	0.00	501	!CEY-IND
502	120.0	0.00	0.00	0.00	501	!CEY-IND
502	130.0	-9.92	-97.85	29.54	501	!CEY-IND FIT
502	245.0	-9.92	-97.85	29.54	501	!SCOTESE & LAWVER (1986)
808	-100	0.00	0.00	0.00	804	!THR-MBL, 100 MY FUTURE
808	000.0	0.00	0.00	0.00	804	!THR-MBL
808	245.0	0.00	0.00	0.00	804	!THURSTON IS. KEPT FIXED TO MARIE BYRDLAND
809	-100	0.00	0.00	0.00	201	!WHT-SAM, 100 MY FUTURE
809	000.0	0.00	0.00	0.00	201	!SAME AS WAP-SAM
809	010.0	0.00	0.00	0.00	201	!THR-SAM
809	020.0	-66.70	-74.30	10.00	201	!THR-SAM
809	029.0	-81.50	-146.30	13.70	201	!THR-SAM
809	110.0	-68.80	-86.90	39.30	201	!THR-SAM
809	120.0	-60.97	169.98	15.00	201	!THR-SAM
809	140.0	-66.90	-92.80	25.20	201	!THR-SAM
809	165.0	-64.13	-79.86	89.32	201	!THR-SAM FIT
809	245.0	-64.13	-79.86	89.32	201	!SCOTESE AND LAWVER (1986)
810	-100	0.00	0.00	0.00	802	!BRK-ANT, 100 MY FUTURE
810	000.0	0.00	0.00	0.00	802	!BRK-ANT
810	245.0	0.00	0.00	0.00	802	!BERKNER IS. KEPT FIXED TO E ANTARCTICA
811	-100	0.00	0.00	0.00	803	!SSHT-WAP, 100 MY FUTURE
811	000.0	0.00	0.00	0.00	803	!SSHT-WAP
811	245.0	0.00	0.00	0.00	803	!S SHETLAND KEPT FIXED TO W ANT. PENNINSULA
812	-100	0.00	0.00	0.00	803	!SORK-WAP, 100 MY FUTURE
812	000.0	0.00	0.00	0.00	803	!SORK-WAP
812	245.0	0.00	0.00	0.00	803	!S ORKNEY IS. KEPT FIXED TO W ANT. PENNIN.
813	-100	0.00	0.00	0.00	807	!CHT-SNZ, 100 MY FUTURE
813	000.0	0.00	0.00	0.00	807	!CHT-SNZ
813	065.0	0.00	0.00	0.00	807	!CHT-SNZ
813	084.0	41.00	-15.90	7.47	807	!CHT-SNZ FIT
813	245.0	41.00	-15.90	7.47	807	!SCOTESE & LAWVER (1986)