

DBSS.2

Vector Motion for the SLR Sites (SL7.1)

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SLR Data Reduction Procedure

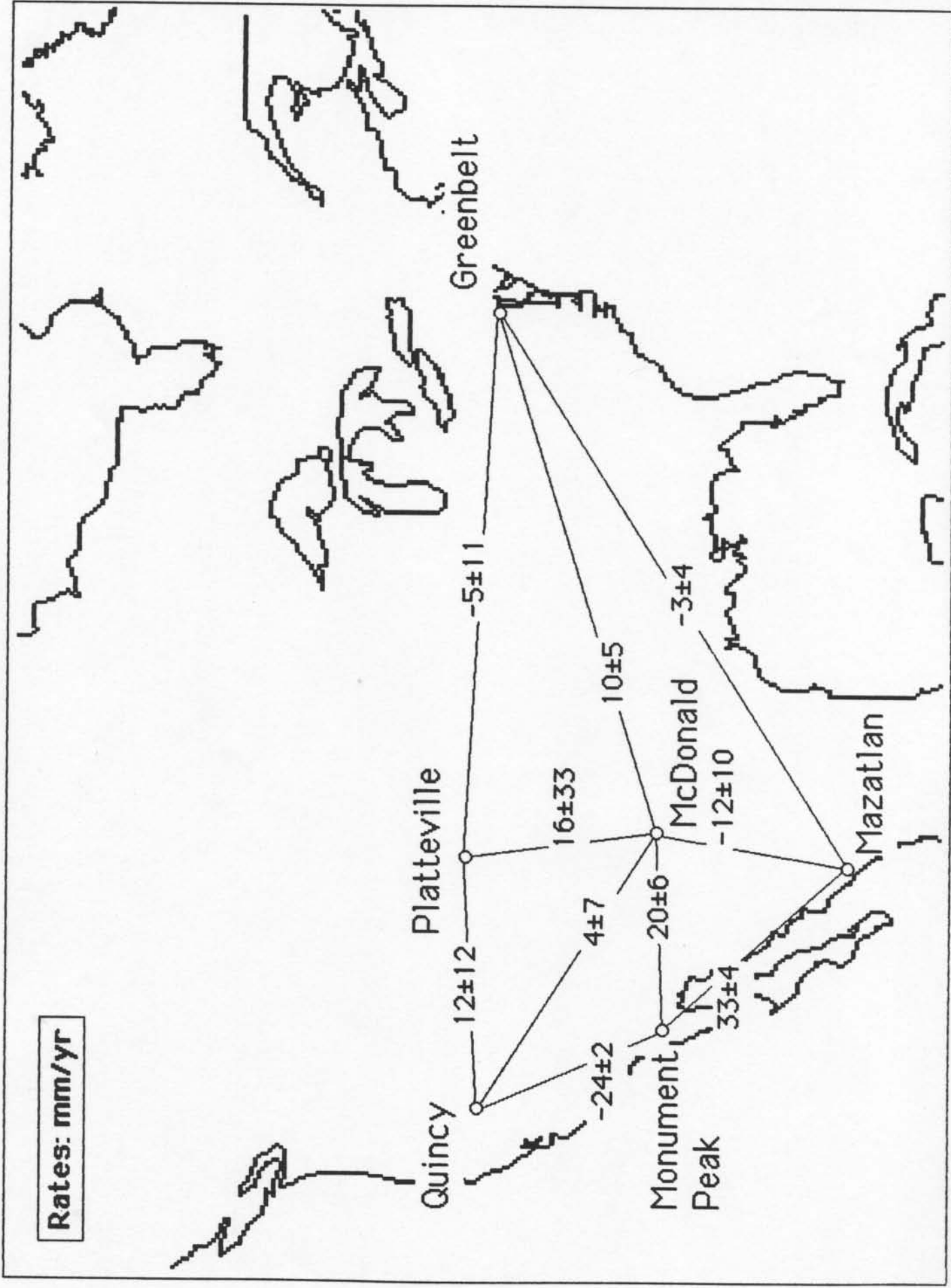
- Compress data to normal points: every pass
- Generate normal matrices with GEODYN: 30 day arcs
- SOLVE normal equations :

Gravity, GM, Tides - over all arcs
Station positions - annually, quarterly
Other parameters - within an arc

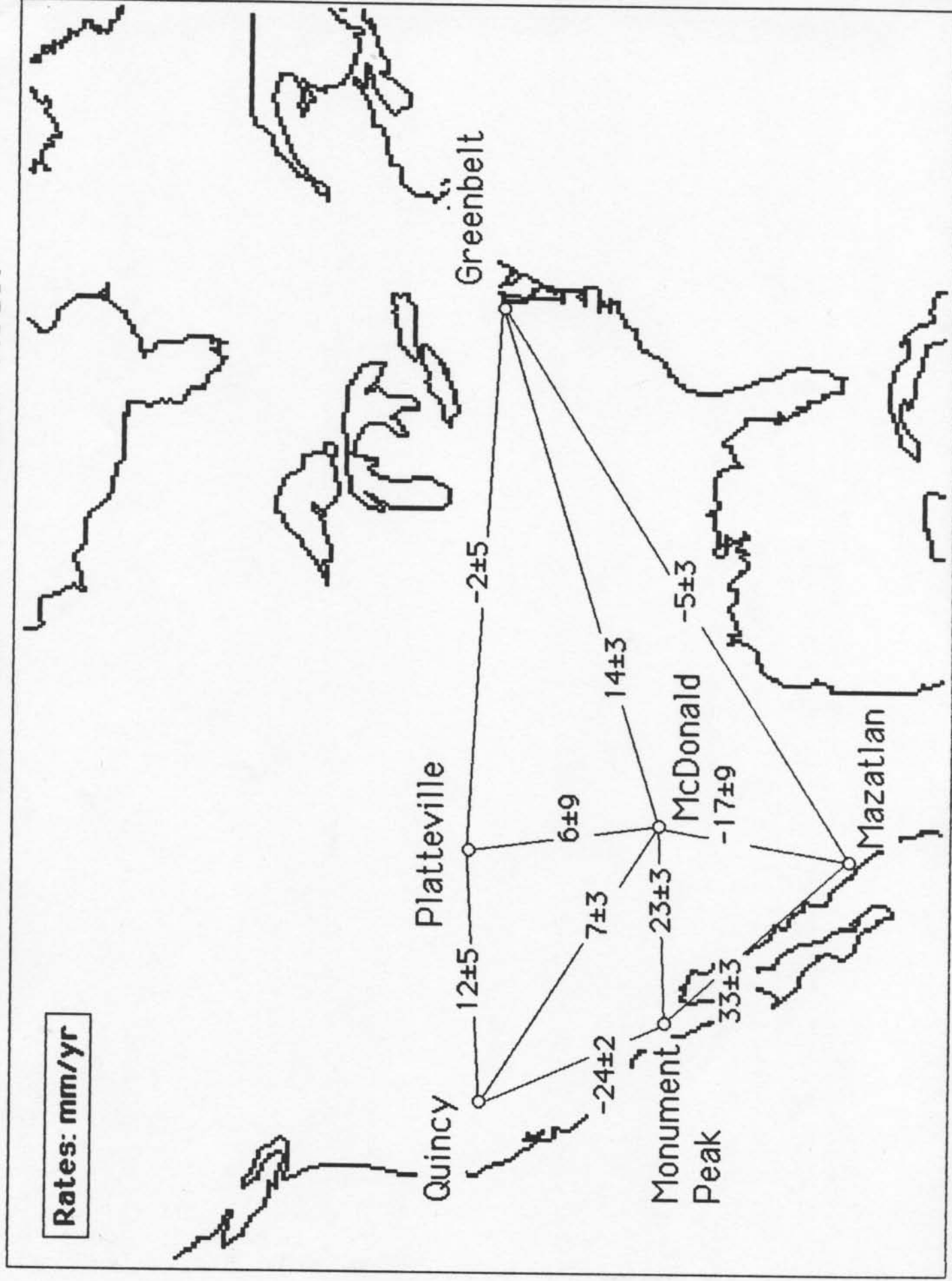
- Establish three dimensional station positions
- Compensate for time-varying reference frame
 - smoother motion
- Rationalize internal network conflict
 - balanced model

SLR Observed Geodesic Rates

Rates: mm/yr

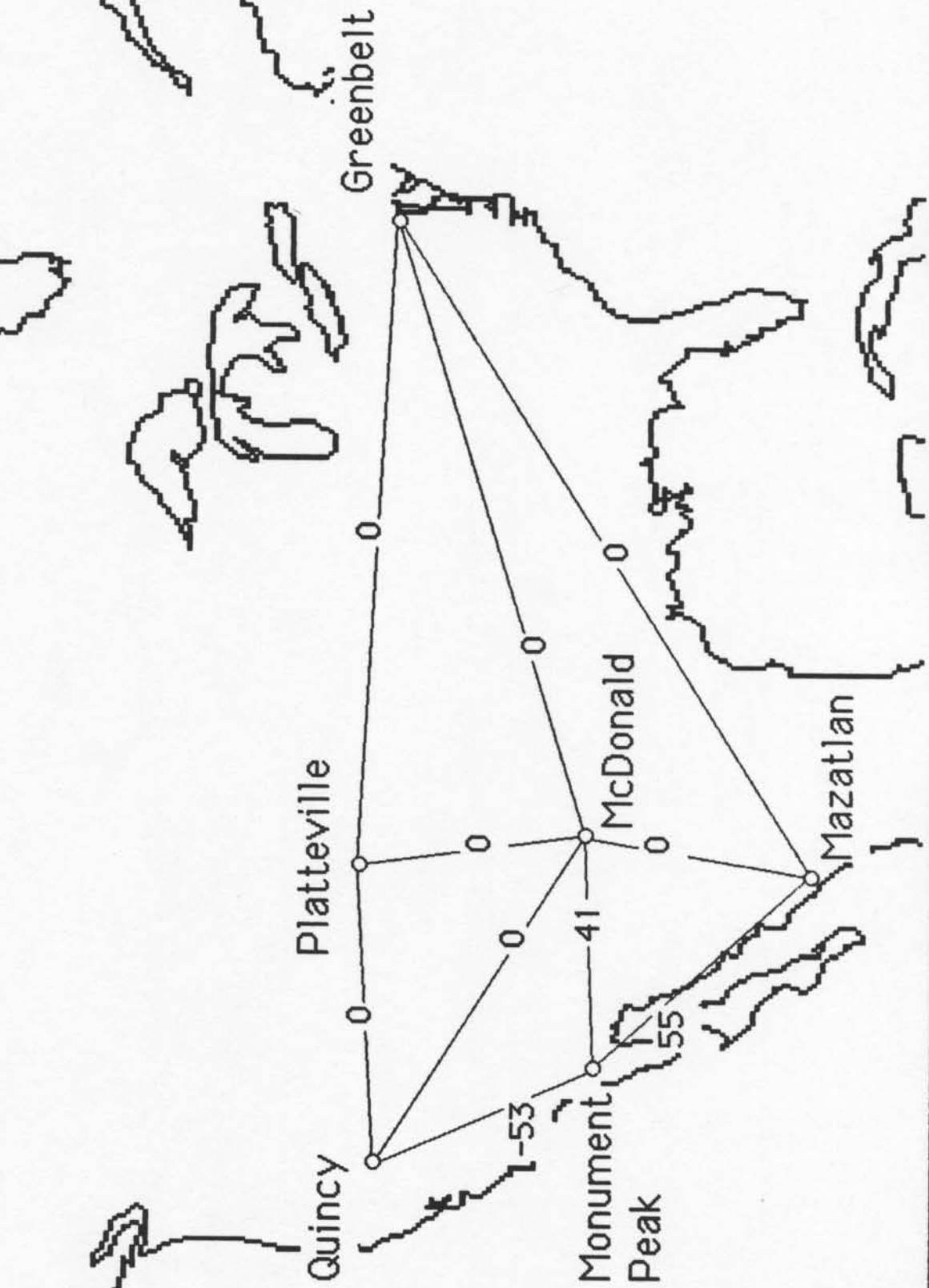


Geodesic Rates from SL7.1 Vector Model



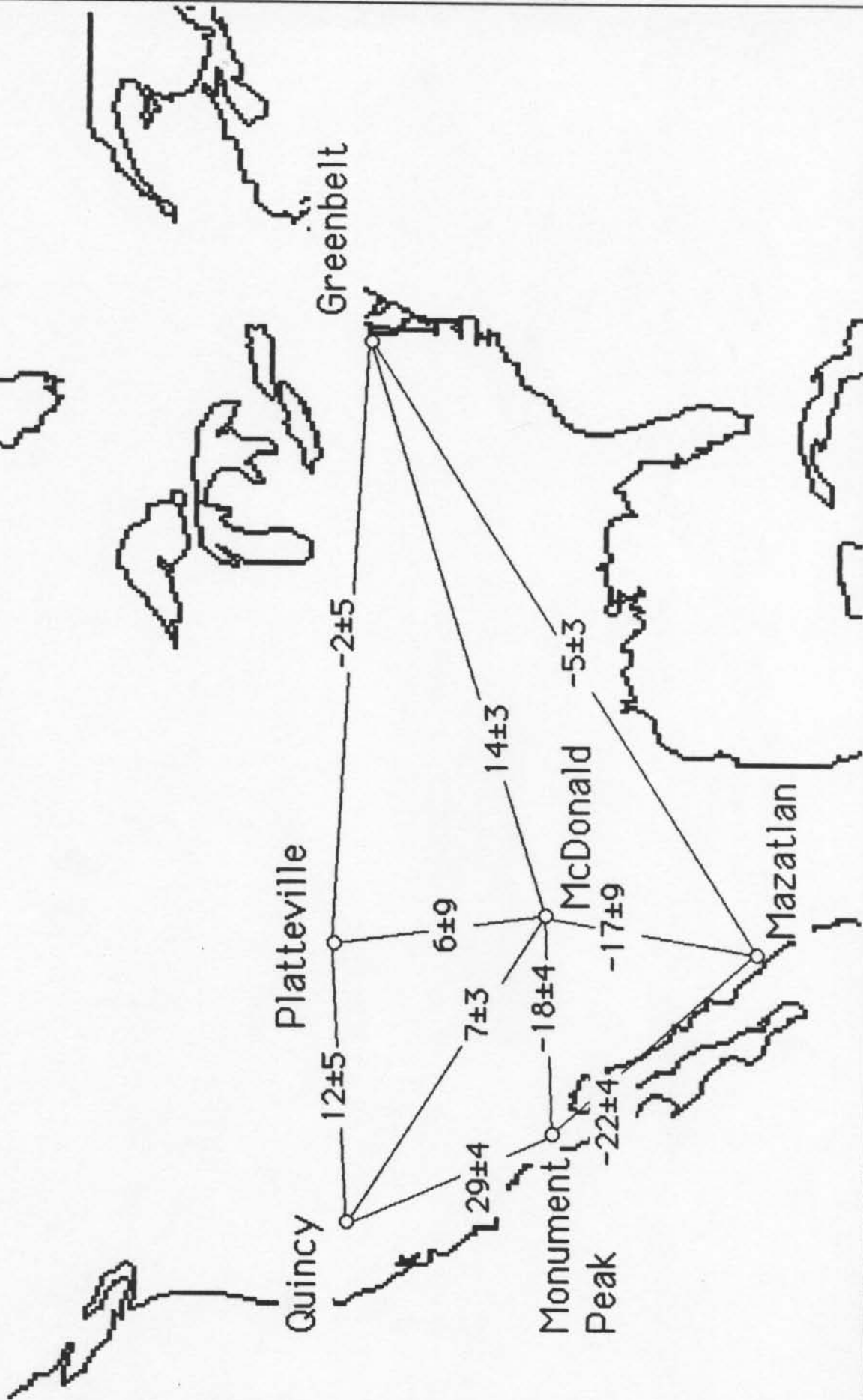
M/J AMO-2 Geodesic Rates

Rates: mm/yr

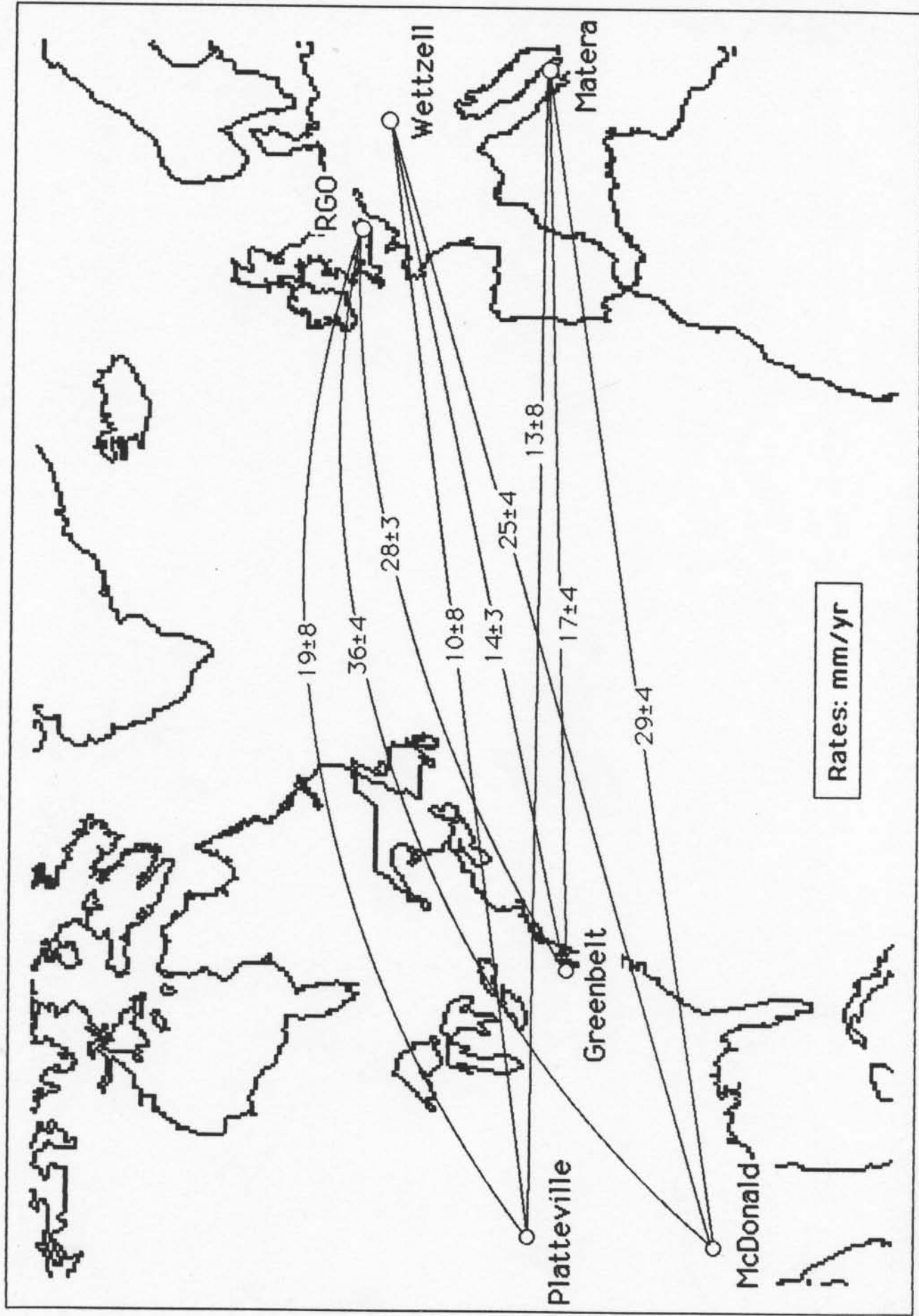


Difference: SL7.1 Vector Geodesic Rates
 Minus M/J AMO-2 Geodesic Rates

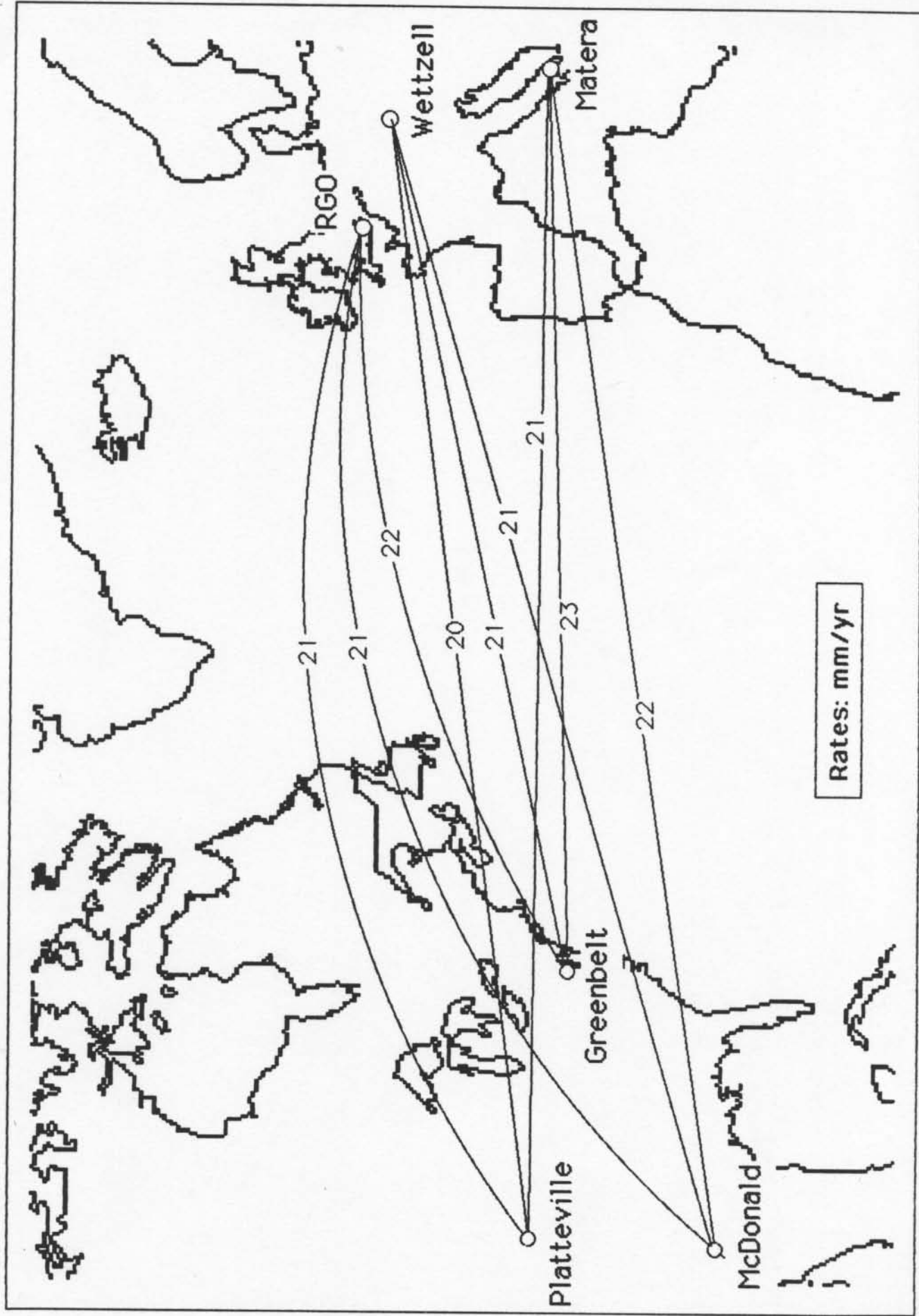
Rates: mm/yr



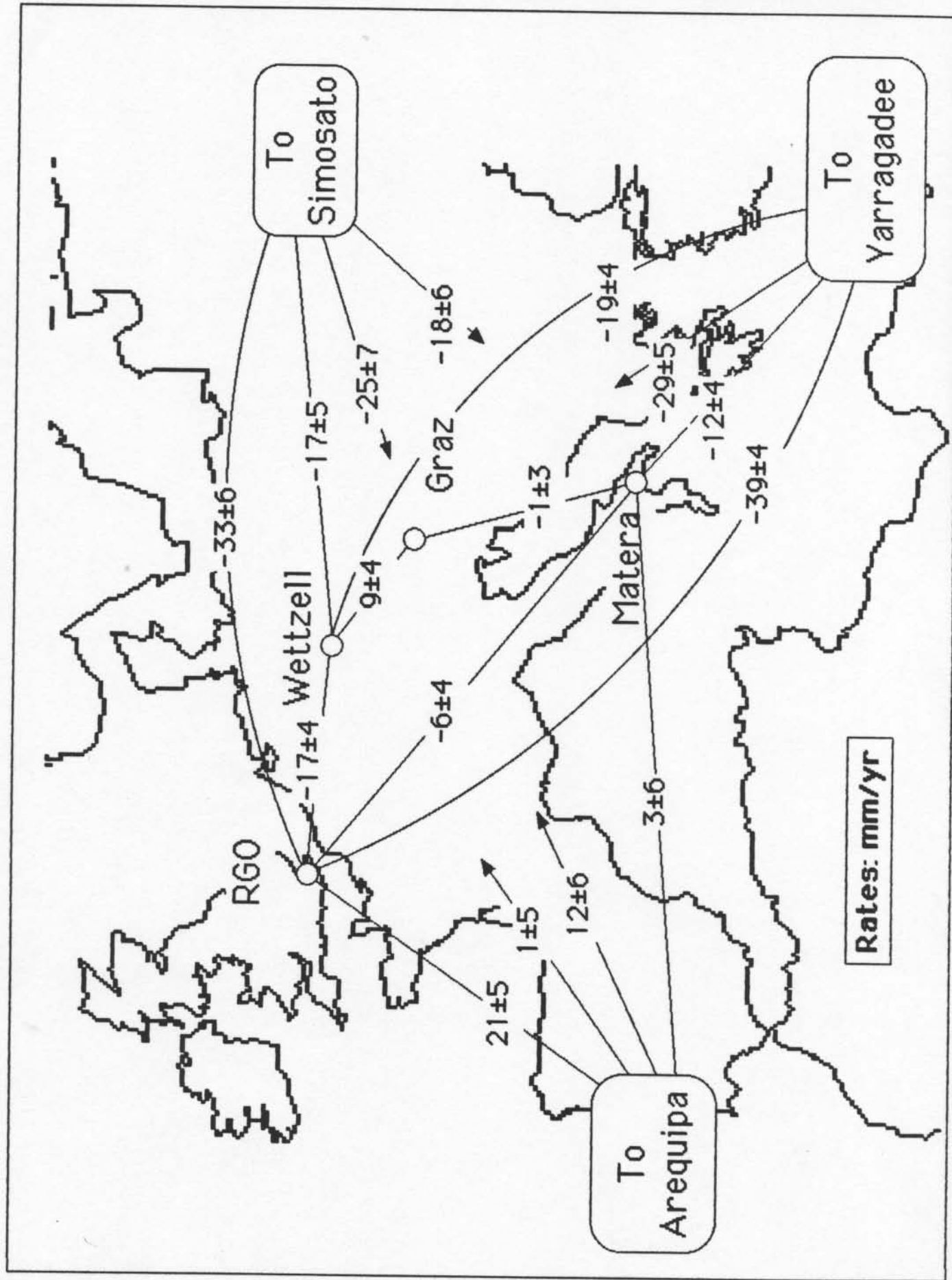
Geodesic Rates from SL7.1 Vector Model



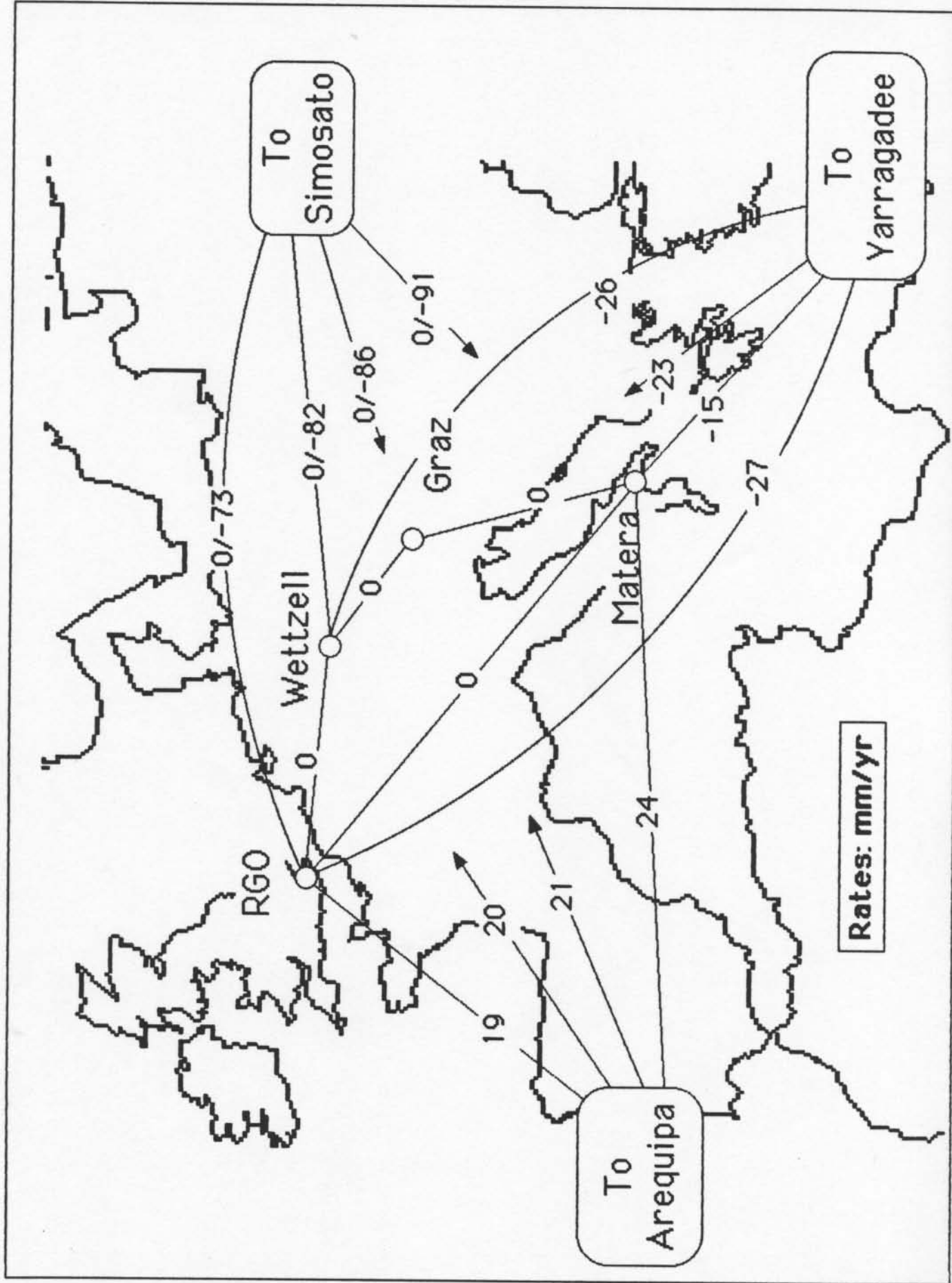
M/J AMO-2 Geodesic Rates



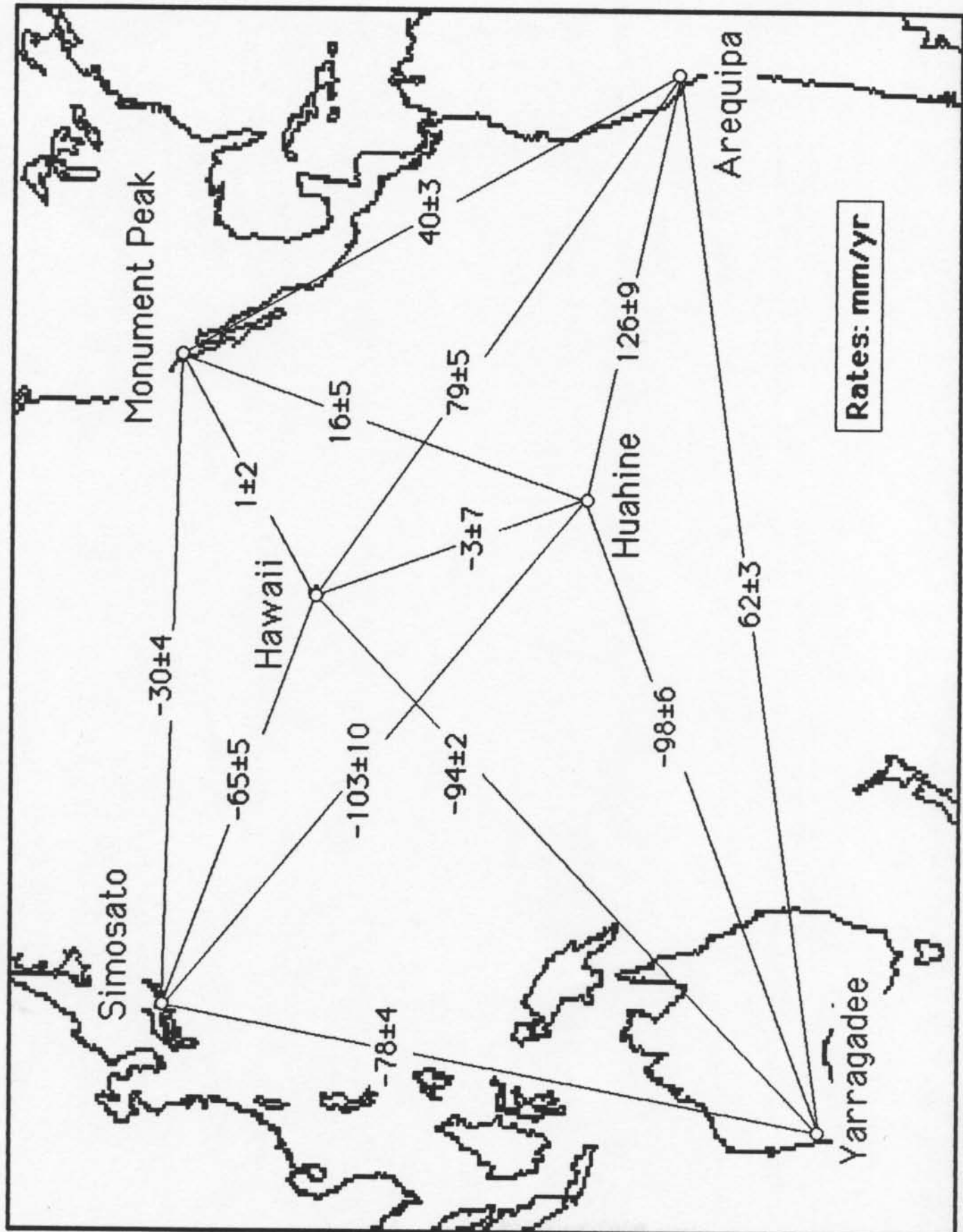
Geodesic Rates from SL7.1 Vector Model



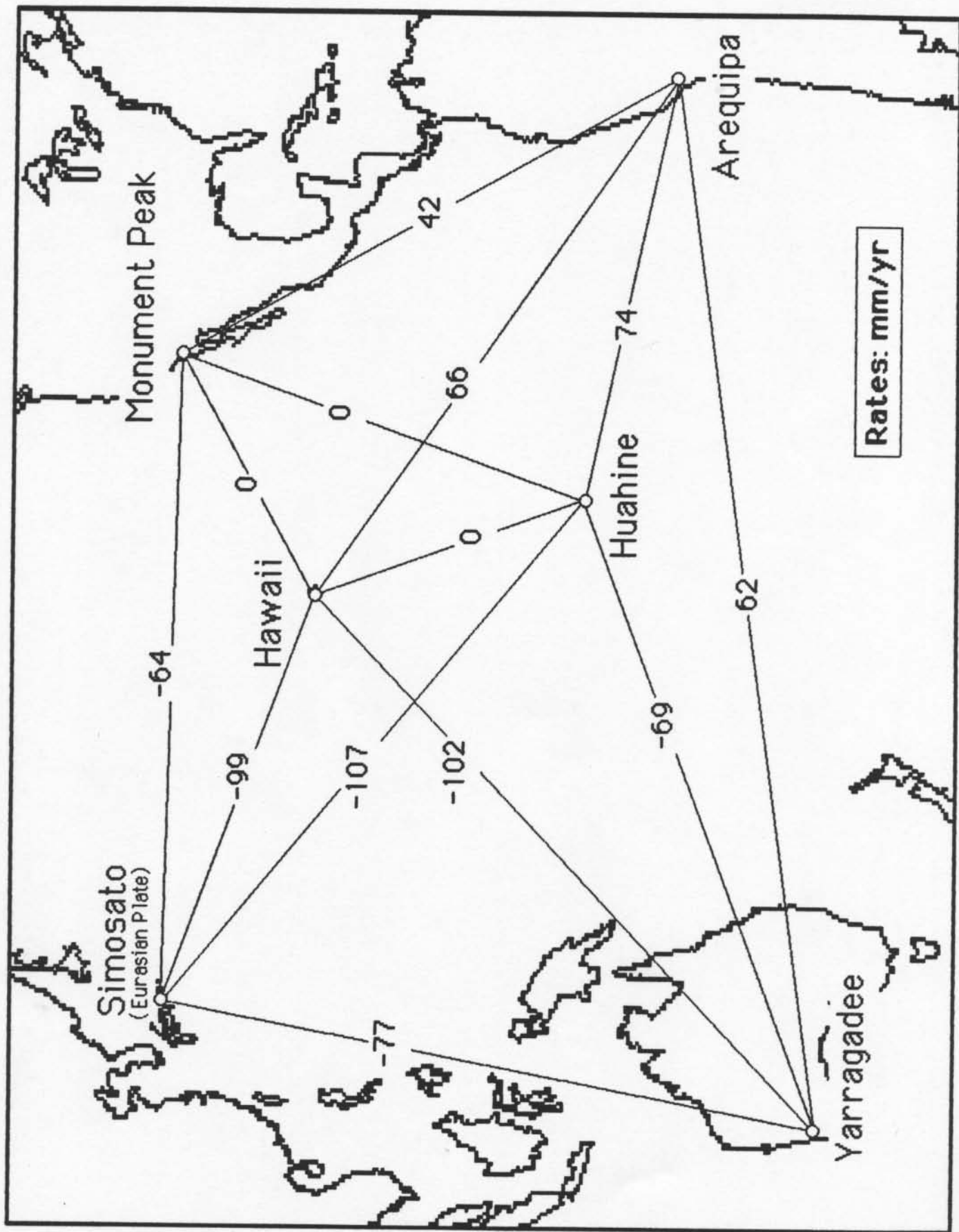
M/J AM0-2 Geodesic Rates



Geodesic Rates from SL7.1 Vector Model



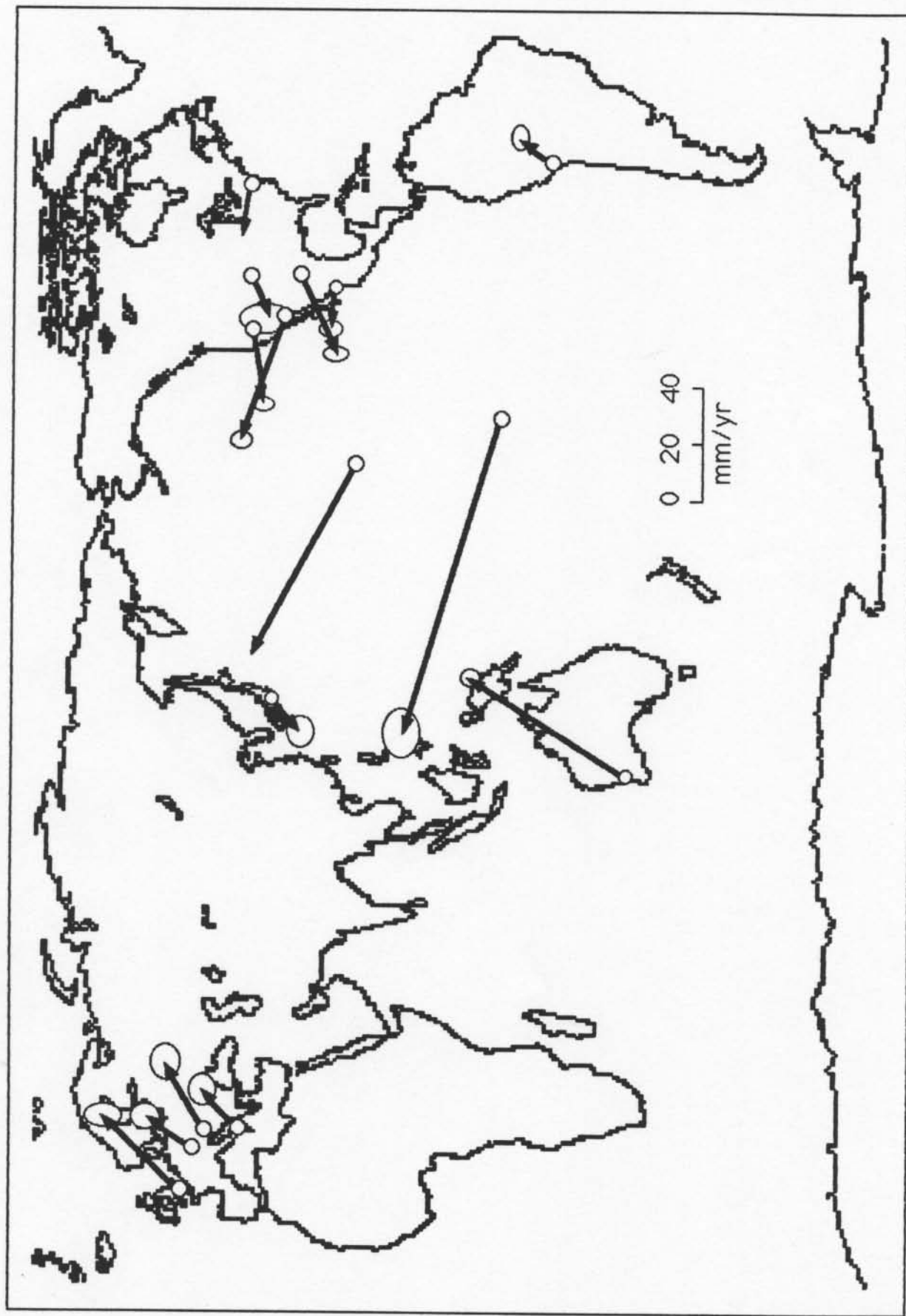
M/J AMO-2 Geodesic Rates



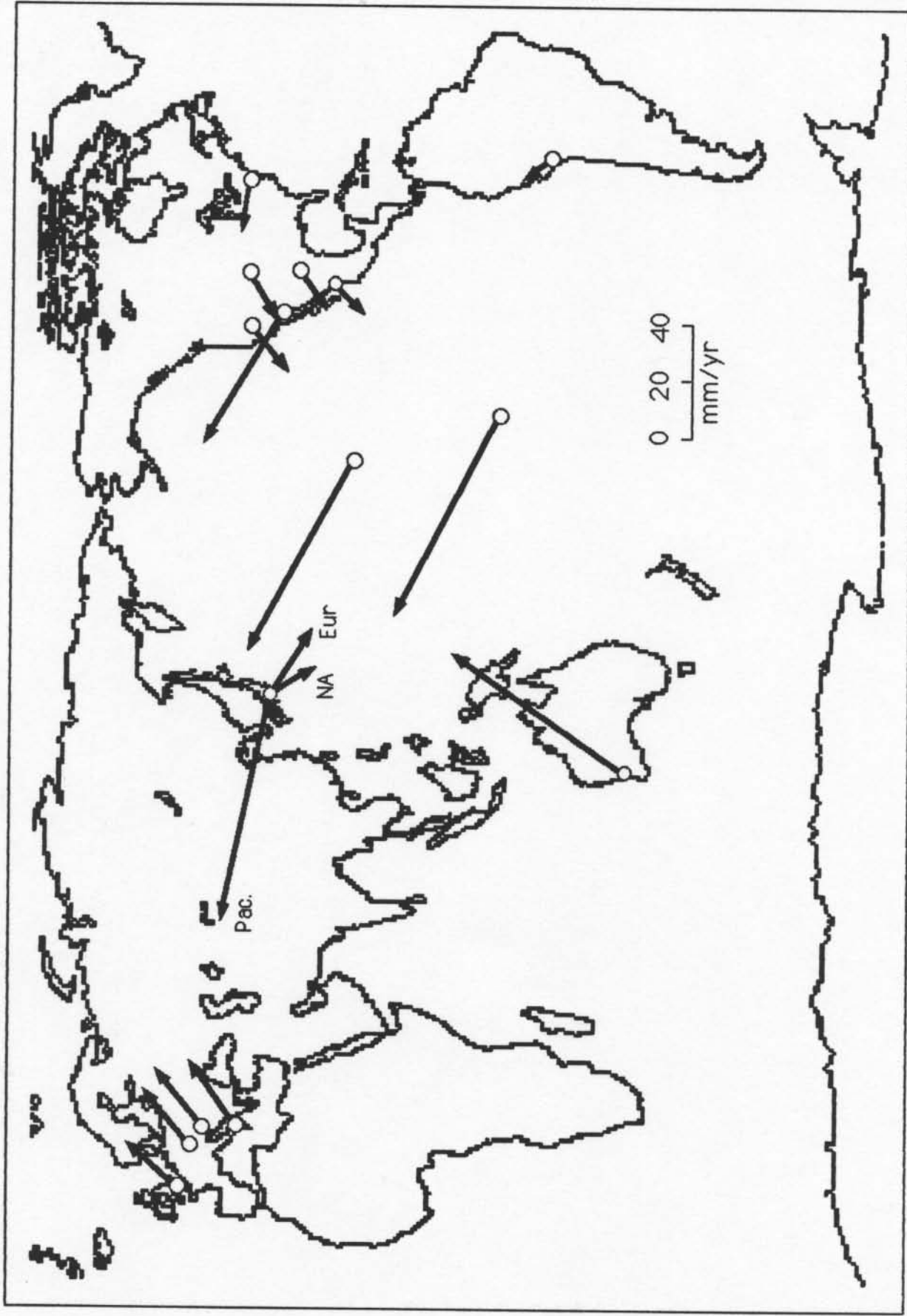
SL7.1 VECTOR MODEL

	LAT	LONG	NDOT	EDOT	$\pm\dot{N}$	$\pm\dot{E}$
GREENBELT	39°	283°	2 mm.	-17 mm.	0 mm.	0 mm.
PLATVILLE	40	255	-6	-14	9	5
MACDONALD	30	255	-12	-27	4	3
QUINCY	40	239	-3	-25	4	2
MAZATLAN	23	253	1	-14	4	3
WETTZEL	49	13	16	11	6	4
RGO	50	0	27	26	7	4
GRAZ	47	15	13	23	5	6
MATERA	40	16	13	13	4	6
MONUMENT PEAK	33	243	15	-45	4	2
HAWAII	20	203	37	-68	0	0
HUAHINE	-16	209	35	-110	6	9
AREQUIPA	-16	288	11	8	3	4
YARAGADEE	-29	115	56	36	4	2
SIMOSATO	33	135	-10	-11	5	6

SL7.1 Vector Motions in AM0-2 Frame



M/J AM0-2 Vector Motions



Conclusions

- Basin & Range extension ~ 1 cm/yr
- San Andreas Fault rate ~ 3 cm/yr
- Huahine moving west of Hawaii by ~ 4 cm/yr
- Simosato Motion neither Eurasian nor Pacific nor North American
- Atlantic spreading ~ 2 cm/yr: as expected
- Yarragadee moving 10cm/yr NNE: as expected