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May 8, 1989

R611.3

The Motion of the Laser Station on Easter Island

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Presented at
The Spring Meeting of the American Geophysical Union
Baltimore, Maryland
May 10, 1989

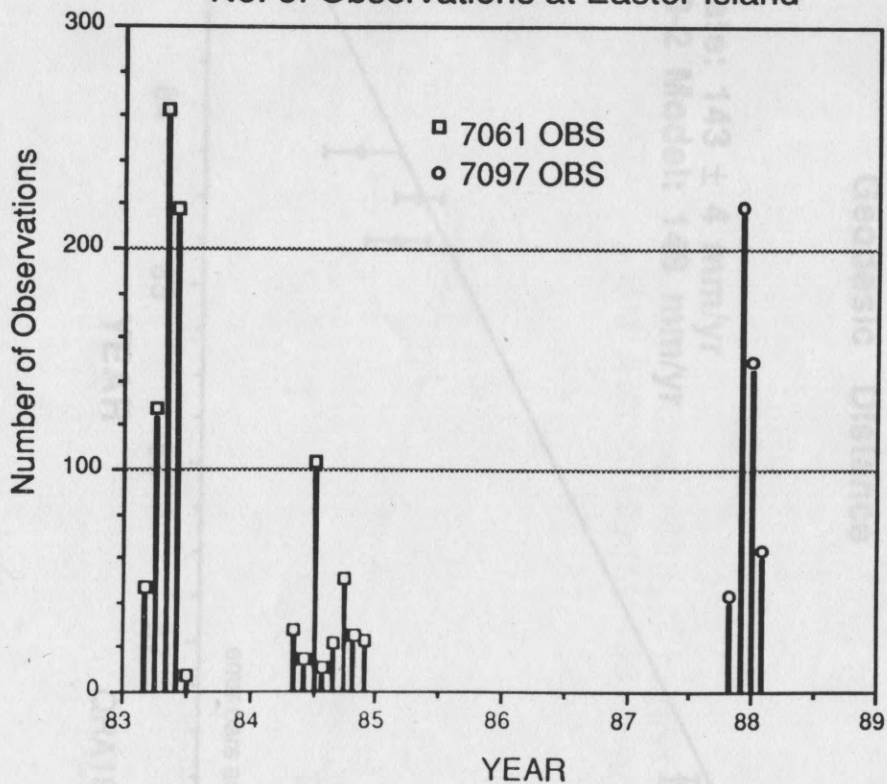
Easter Island Data Summary

BS0404

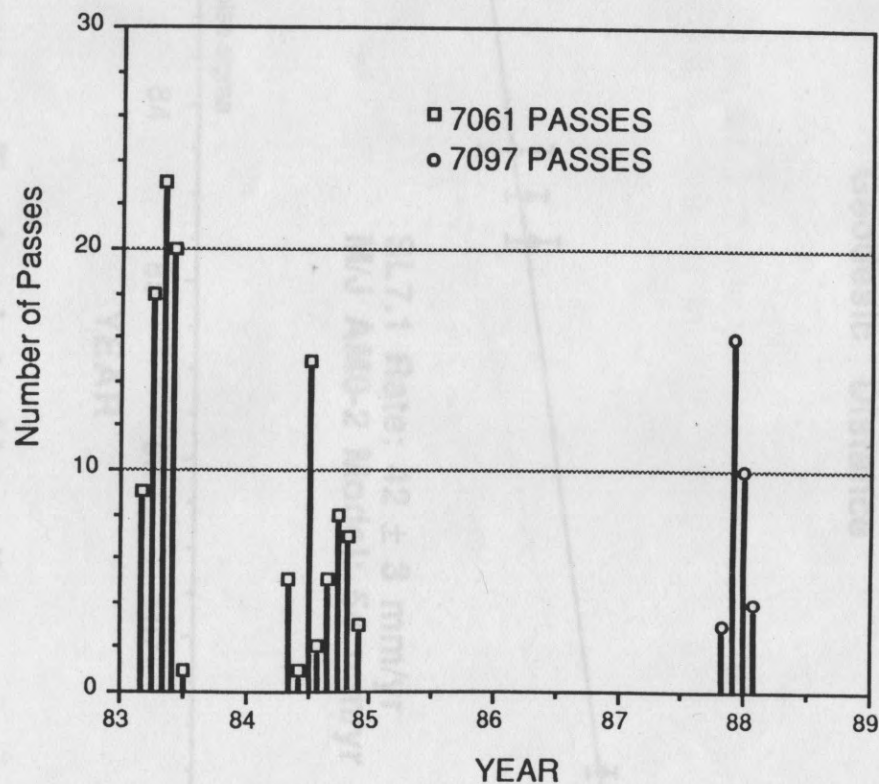
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Easter Island Data Summary

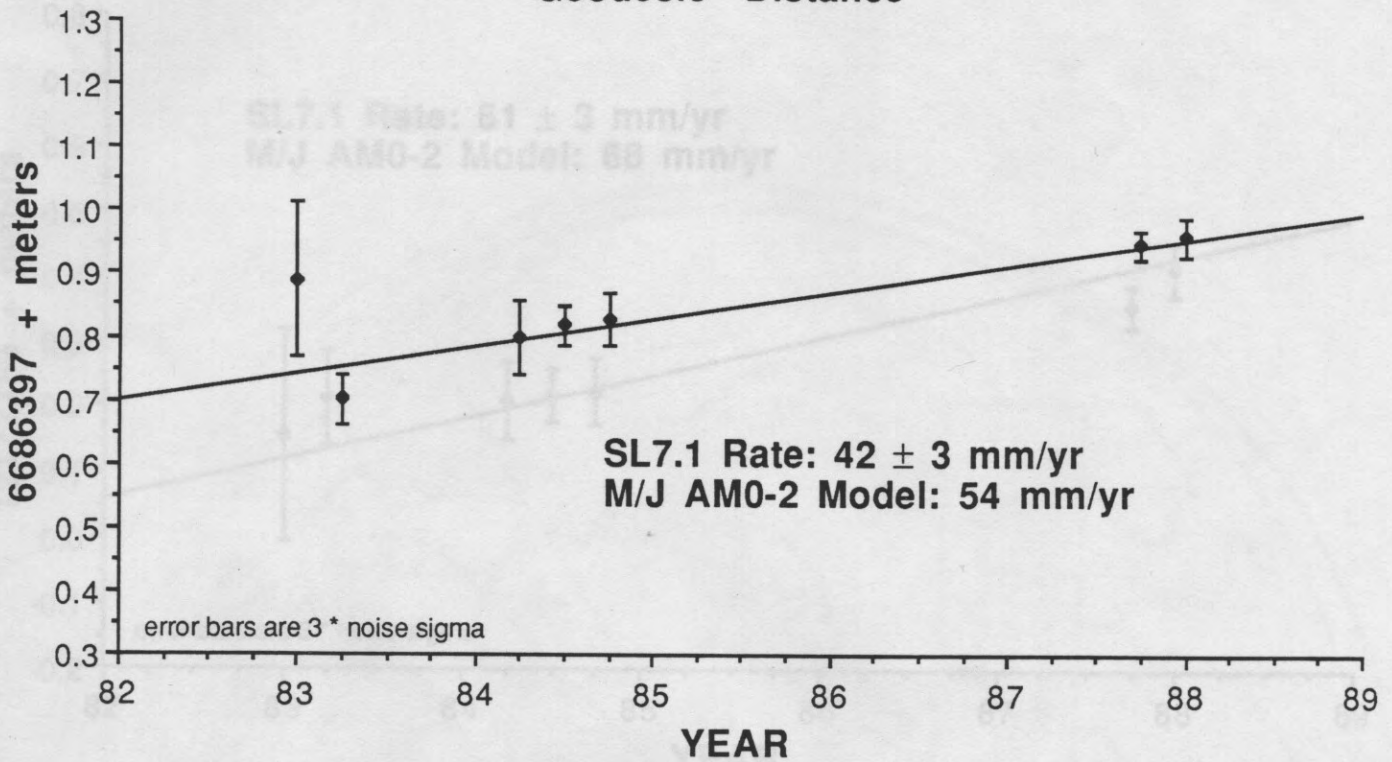
No. of Observations at Easter Island



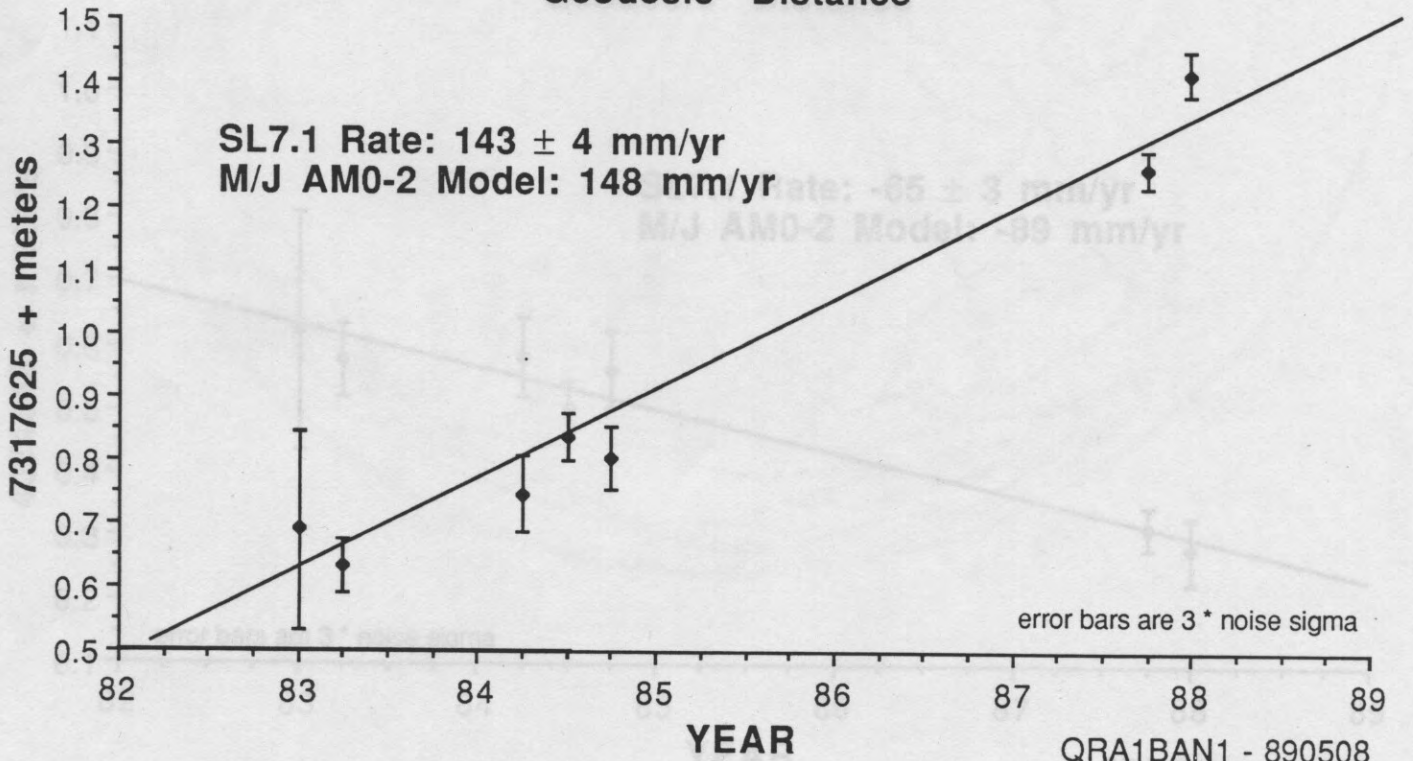
No. of Passes at Easter Island



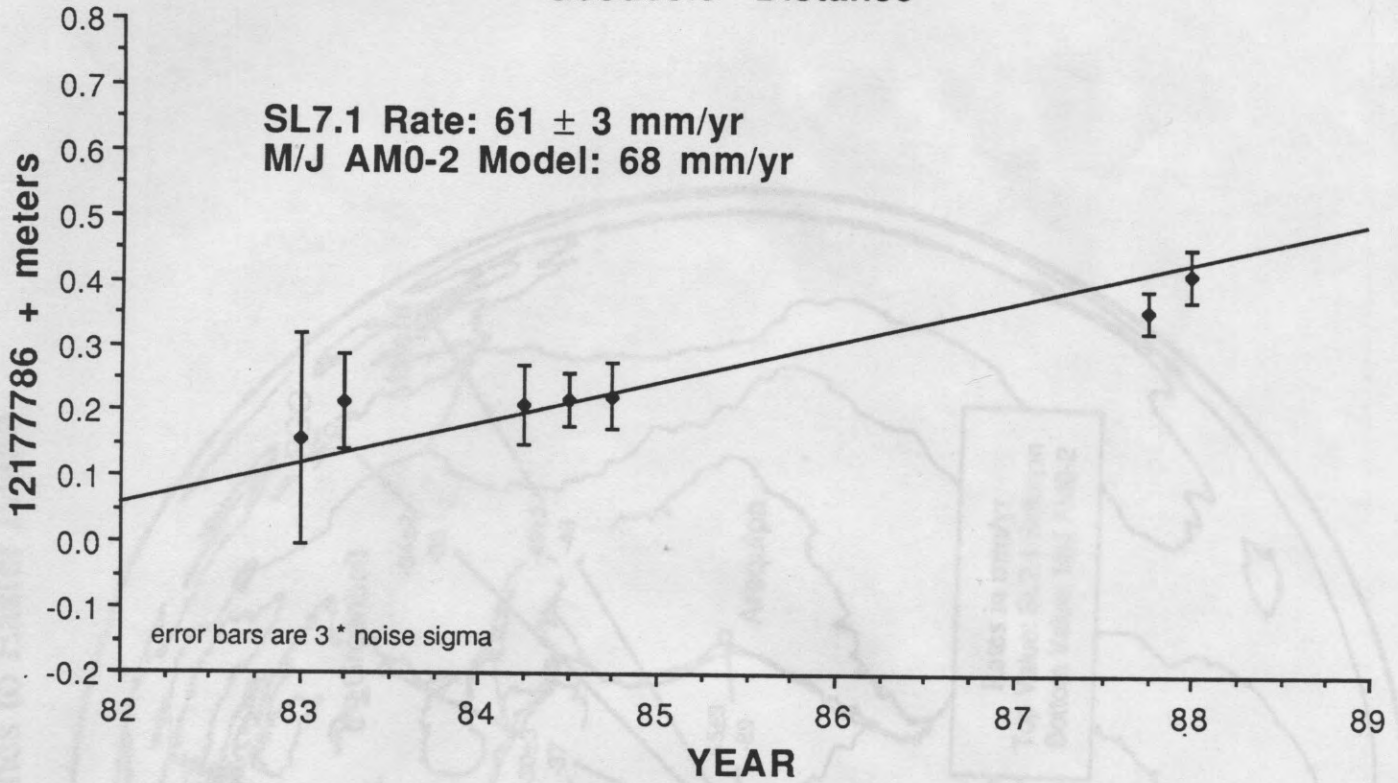
Easter I. to Monument Peak Geodesic Distance



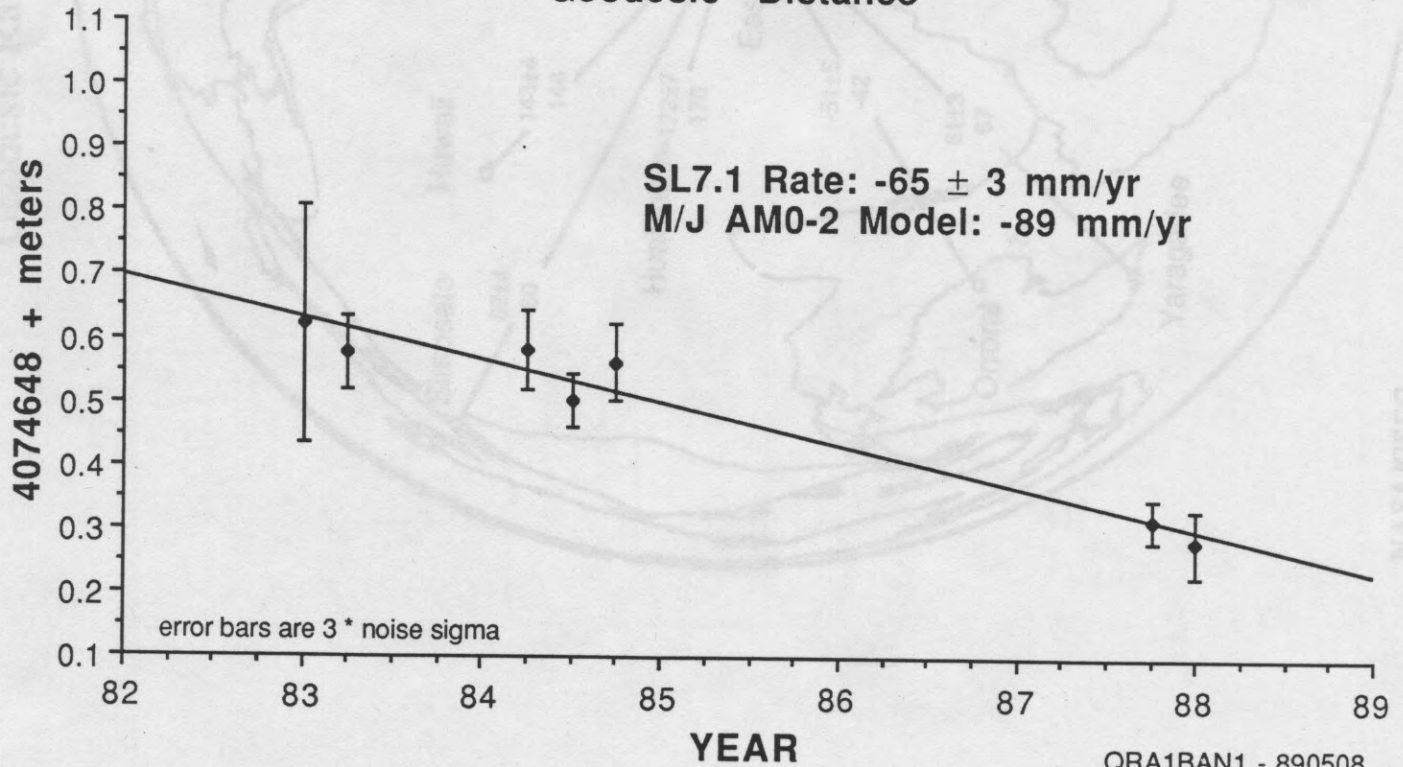
Easter I. to Hawaii Geodesic Distance



Easter I. to Yaragadee Geodesic Distance



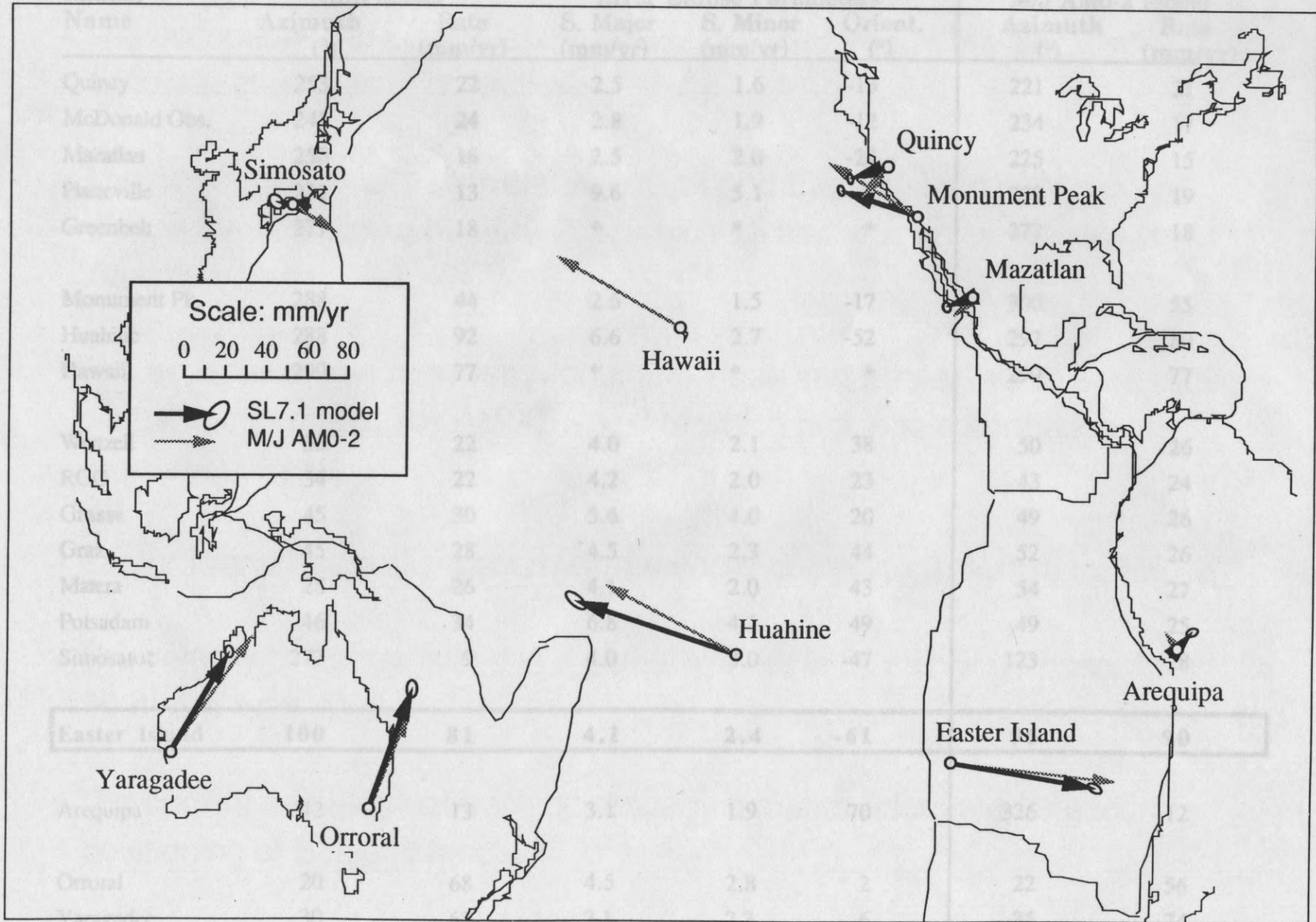
Easter I. to Arequipa Geodesic Distance



Geodesic Rates for lines to Easter Island



Vector Motions Across the Pacific Basin



SLR Station Velocity Model

Station Name	SLR Model		Error Ellipse Parameters			M/J AM0-2 Model	
	Azimuth (°)	Rate (mm/yr)	S. Major (mm/yr)	S. Minor (mm/yr)	Orient. (°)	Azimuth (°)	Rate (mm/yr)
Quincy	253	22	2.5	1.6	-13	221	21
McDonald Obs.	245	24	2.8	1.9	-12	234	17
Mazatlan	250	16	2.5	2.0	-24	225	15
Platteville	231	13	9.6	5.1	-7	239	19
Greenbelt	277	18	*	*	*	277	18
Monument Pk.	288	44	2.6	1.5	-17	300	55
Huahine	288	92	6.6	2.7	-52	297	80
Hawaii	299	77	*	*	*	299	77
Wetzell	35	22	4.0	2.1	38	50	26
RGO	34	22	4.2	2.0	23	43	24
Grasse	45	30	5.6	4.0	20	49	26
Graz	45	28	4.5	2.3	44	52	26
Matera	28	26	4.1	2.0	43	54	27
Potsadam	46	34	6.8	4.1	49	49	25
Simosato‡	277	9	4.0	3.0	-47	123	28
Easter Island	100	81	4.1	2.4	-61	96	90
Arequipa	42	13	3.1	1.9	70	326	12
Orroral	20	68	4.5	2.8	2	22	56
Yaragadee	30	62	3.1	2.3	-6	35	74

* Greenbelt and Hawaii are constrained to move as M/J AM0-2.

‡ Although the plate upon which Simosato resides is under question, we have assumed Eurasian in our analysis.

QRA1BAN1 solution - 890508

SUMMARY

- The occupations at Easter Island over a five year period have produced accurate estimates of its motion.
- The convergence rate between Arequipa and Easter Island is 24 mm/yr slower than predicted by AM0-2; of which 13 mm/yr is accounted for at Arequipa
- The separation rate between Monument Peak and Easter Island is 12 mm/yr faster than predicted by AM0-2; most of which is due to deformation at Monument Peak.
- Easter Island has a slight southward velocity component relative to AM0-2.
- The velocity of Easter Island in a global system is 81 mm/yr compared with 90 mm/yr from AM0-2
- The current semi-annual tracking strategy appears adequate for accurate positioning of Easter Island.