

THE GEODYNAMICS OF LAGEOS TRACKING STATIONS IN THE WESTERN U. S.

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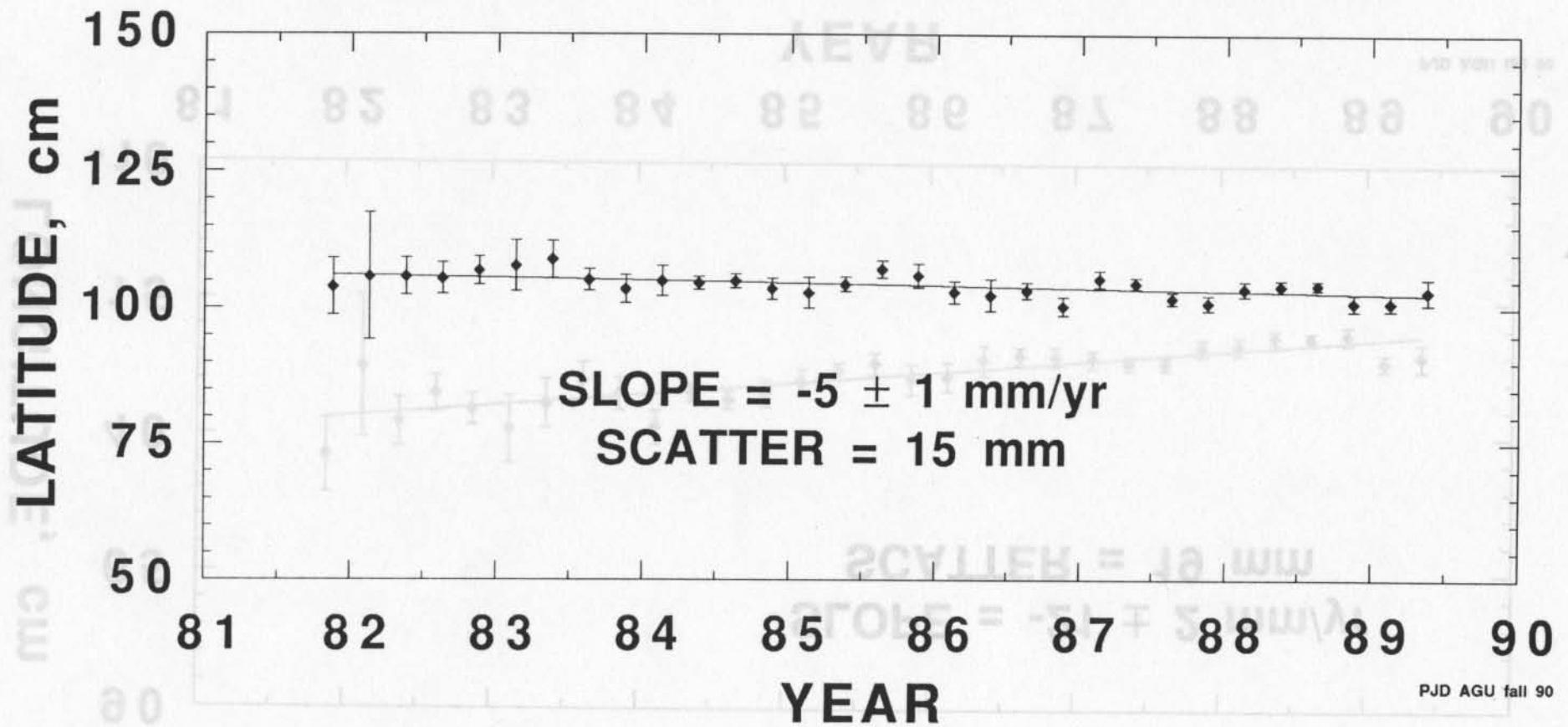
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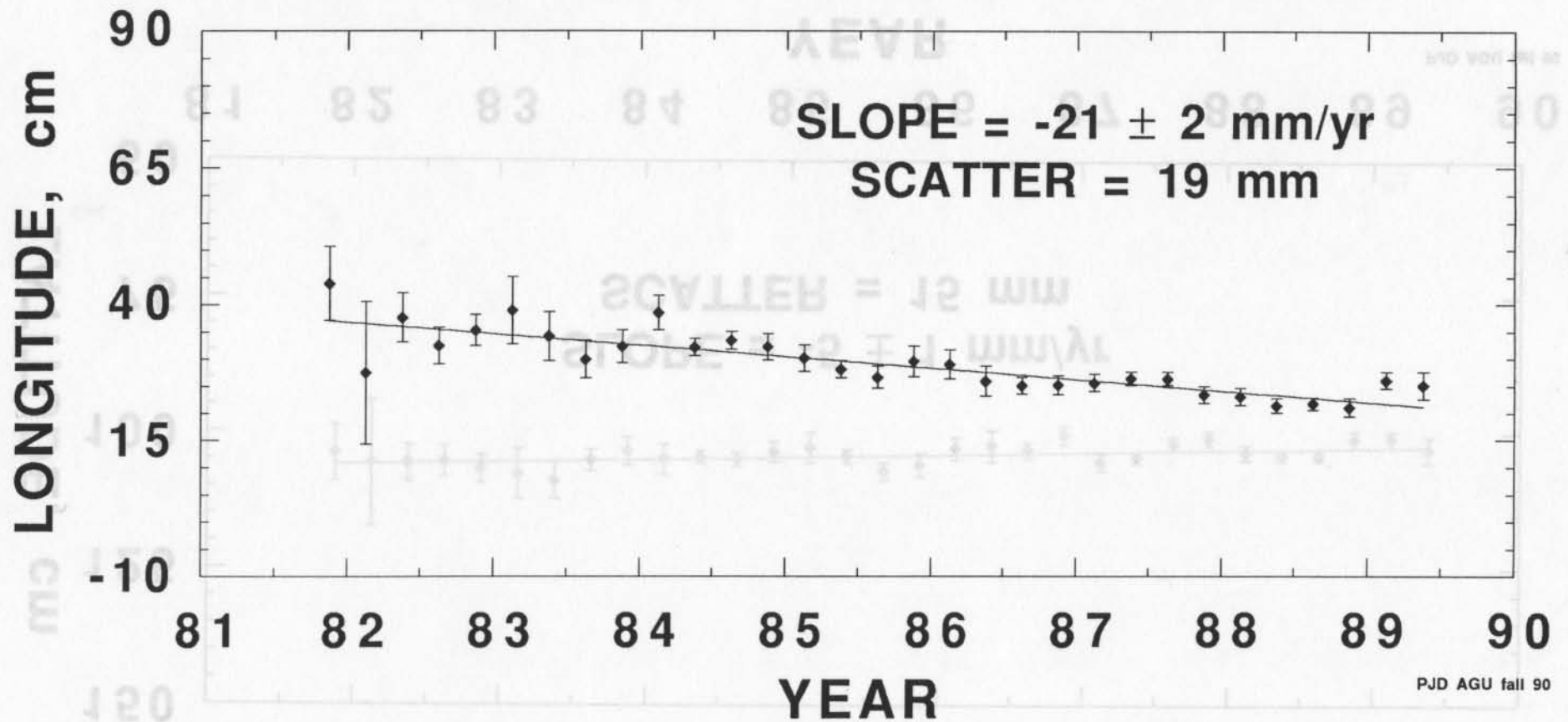
SUMMARY

The Satellite Laser Ranging Stations at Quincy in northern California, Monument Peak in southern California and Mazatlan, Mexico will participate in the Altimeter Instrument Verification for the up-coming TOPEX/POSEIDON Mission. The proximity of these sites to the San Andreas Fault causes relative horizontal motion which is not described by the latest geological models. The variation in the three-dimensional position of each of the stations has been determined from LAGEOS observations collected since 1982.

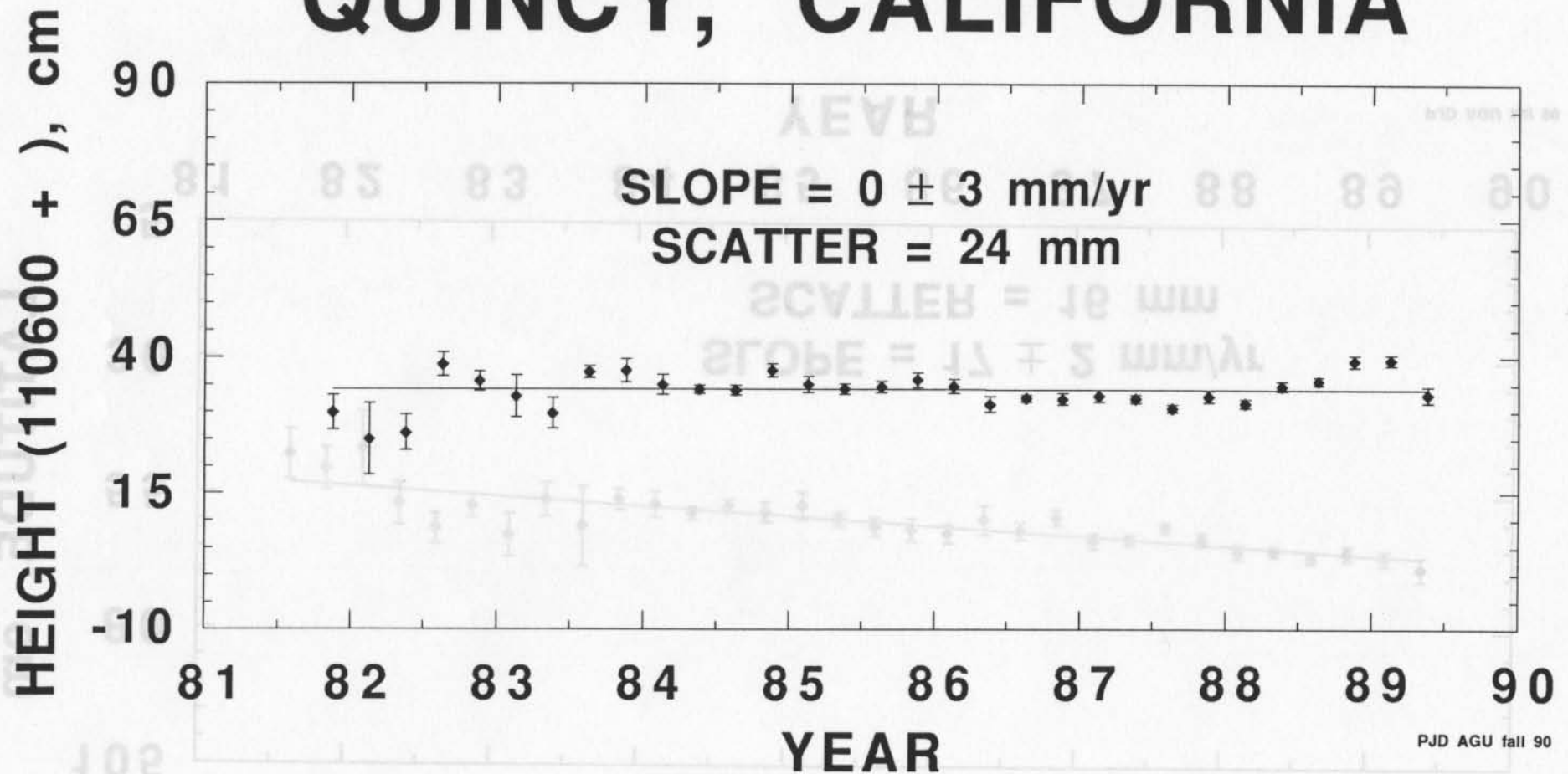
QUINCY, CALIFORNIA



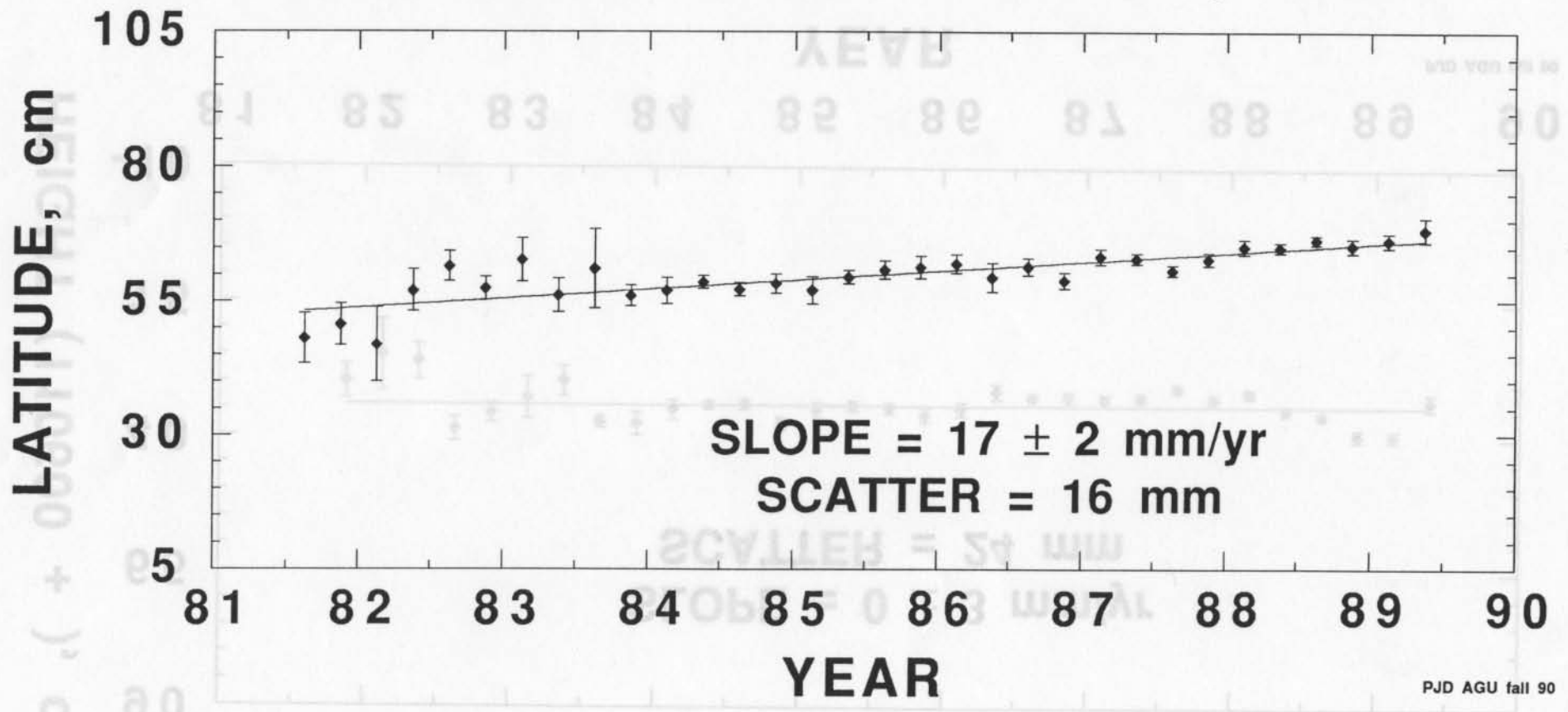
QUINCY, CALIFORNIA



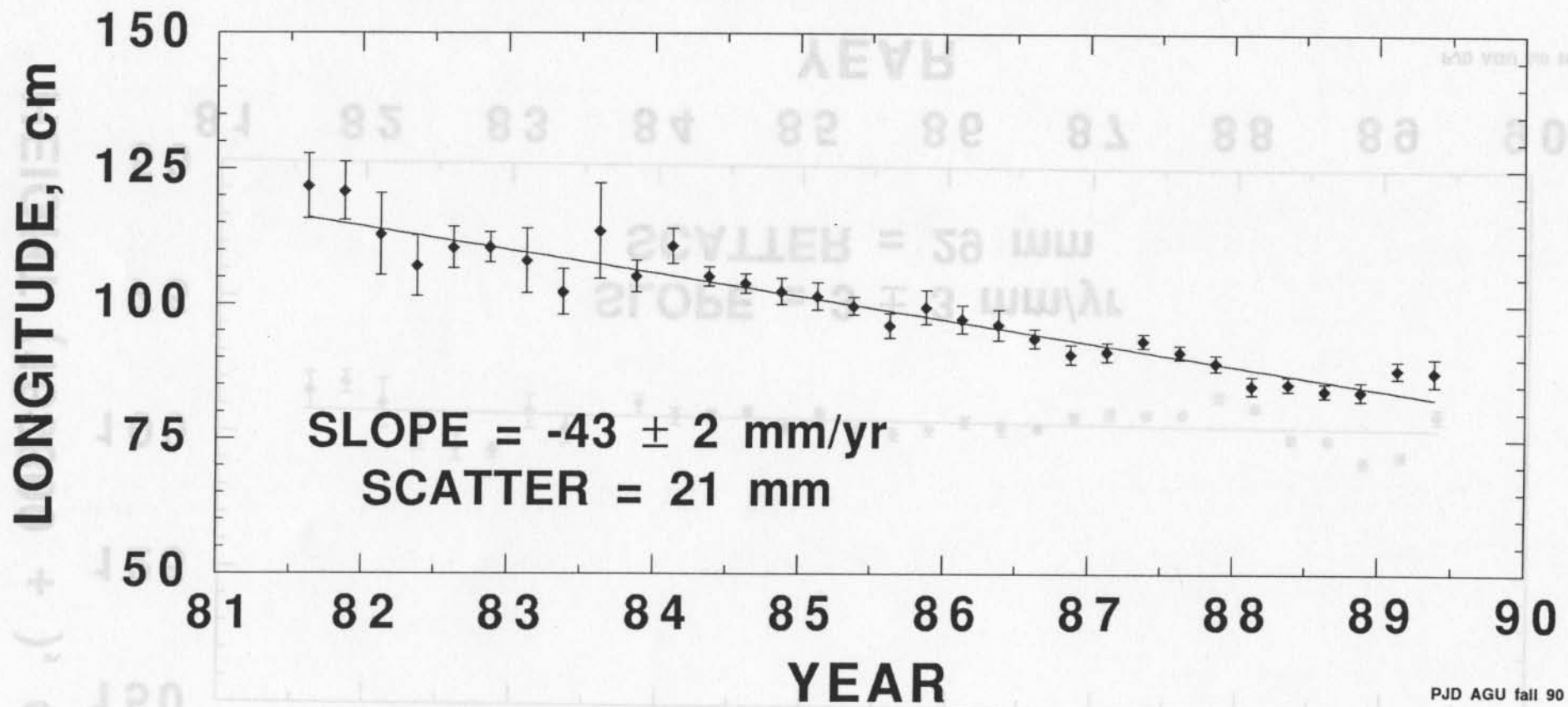
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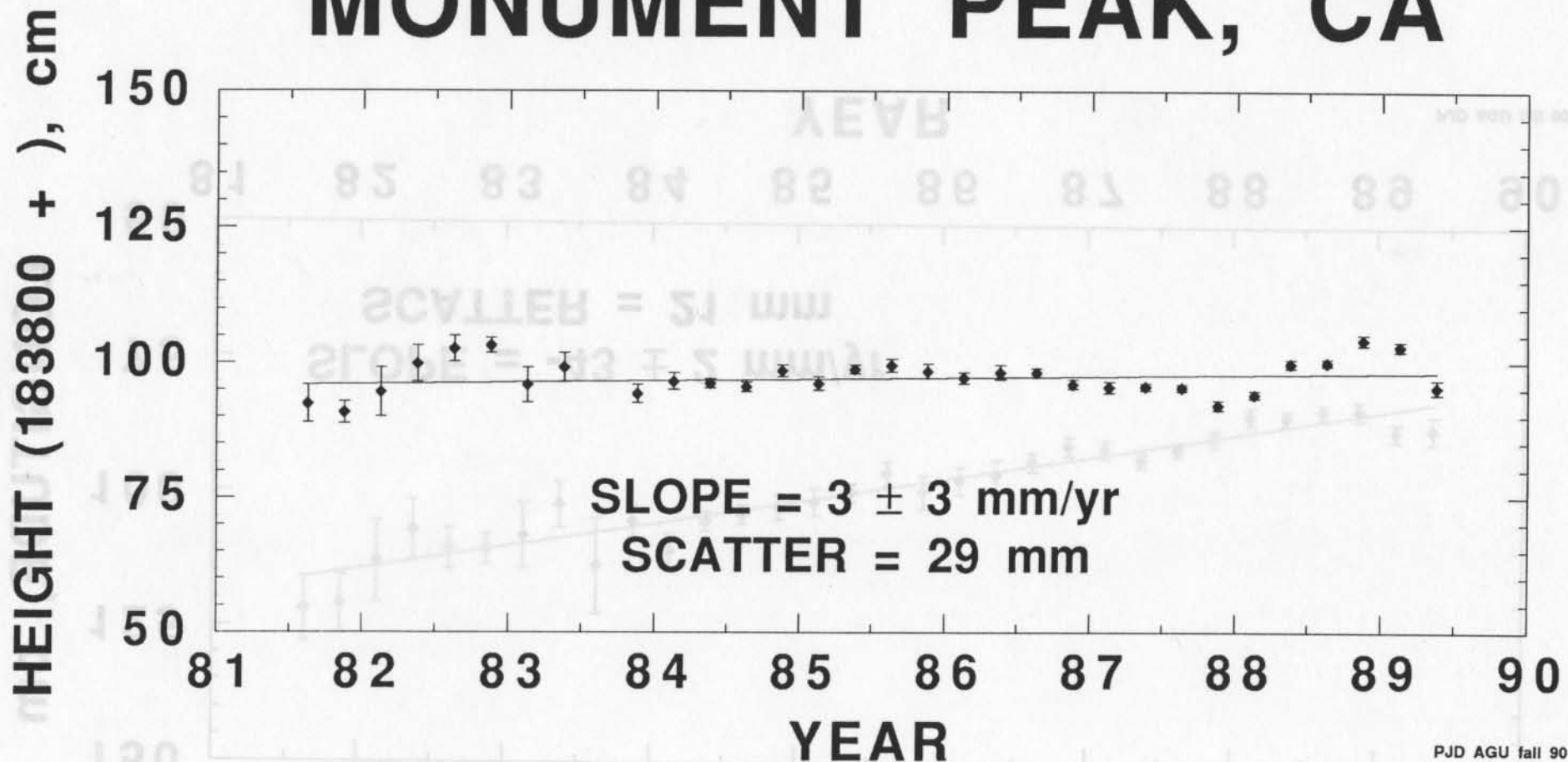
MONUMENT PEAK, CA



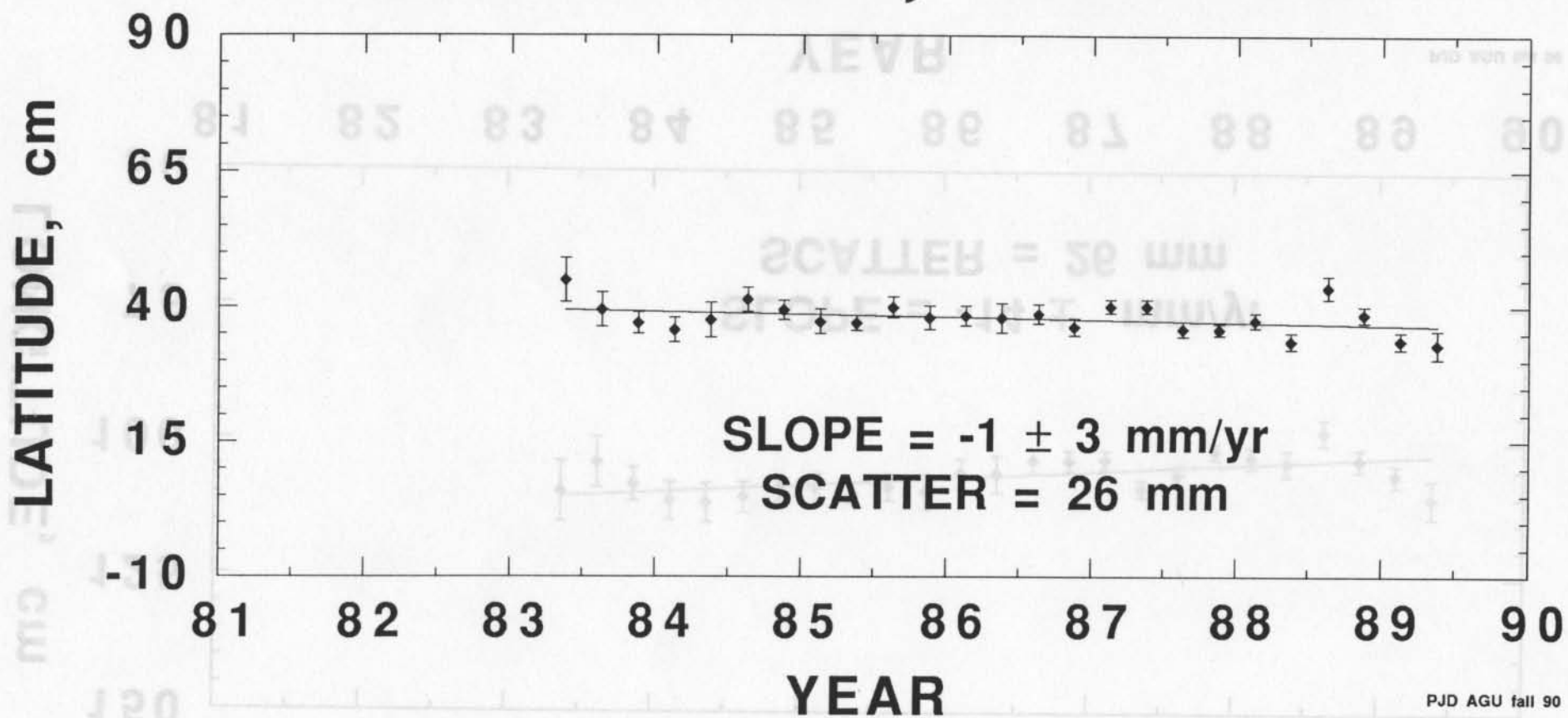
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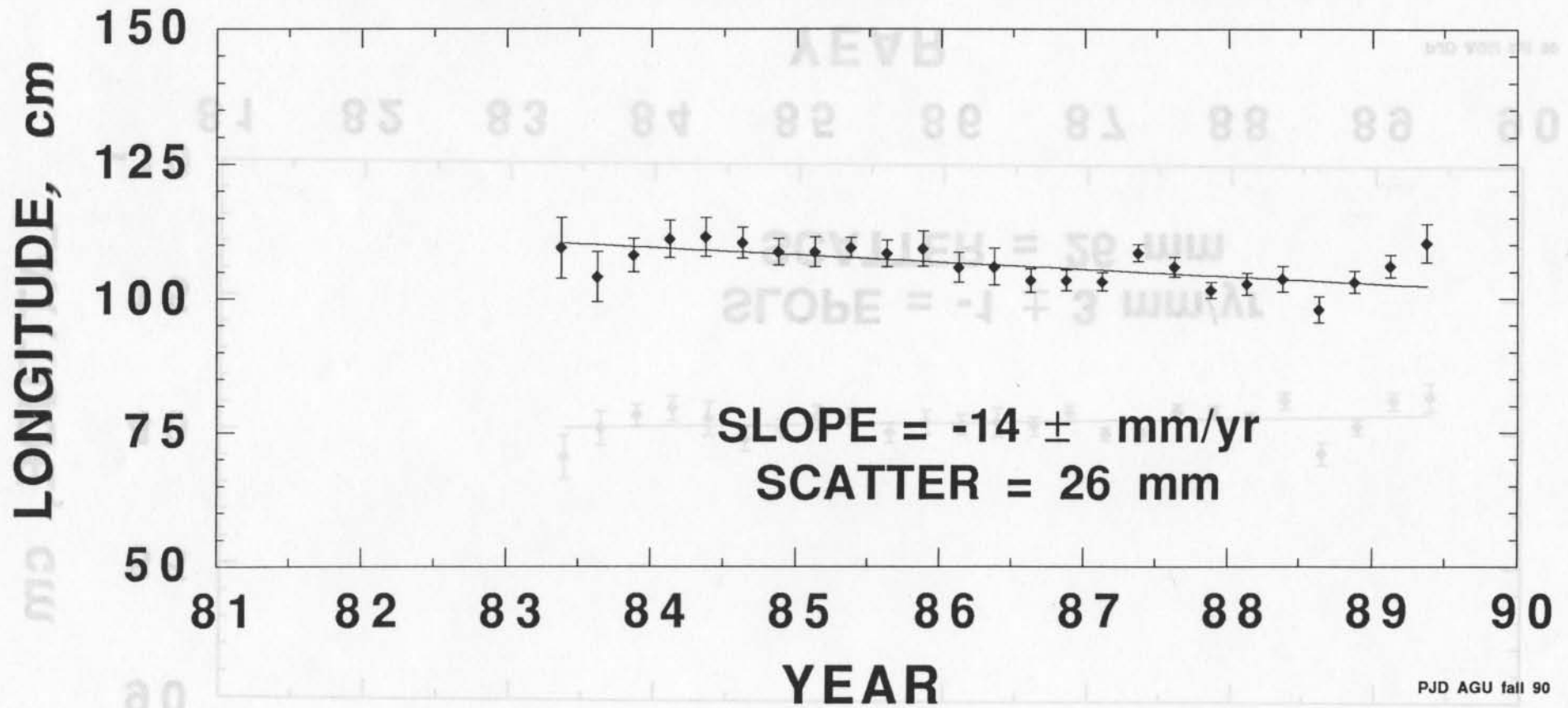
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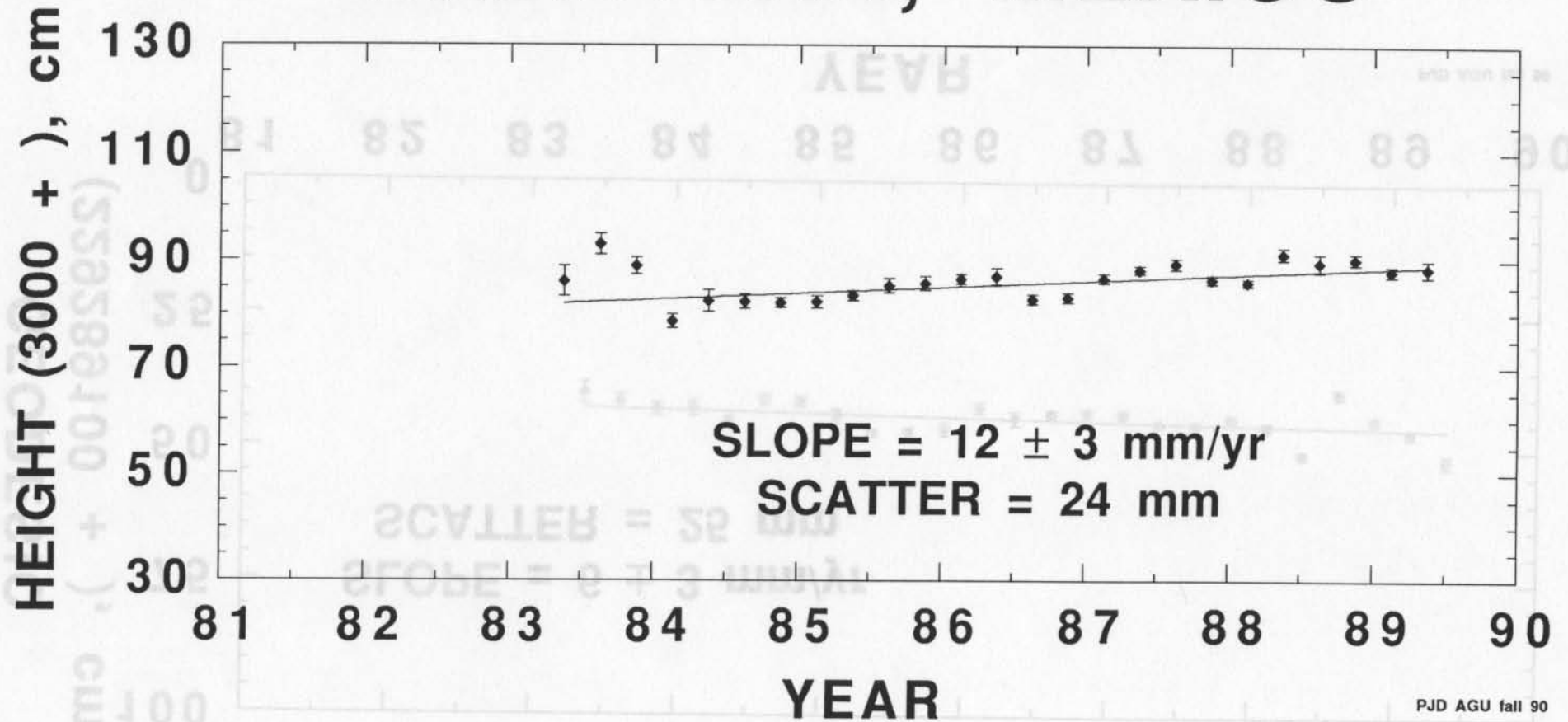
MAZATLAN, MEXICO



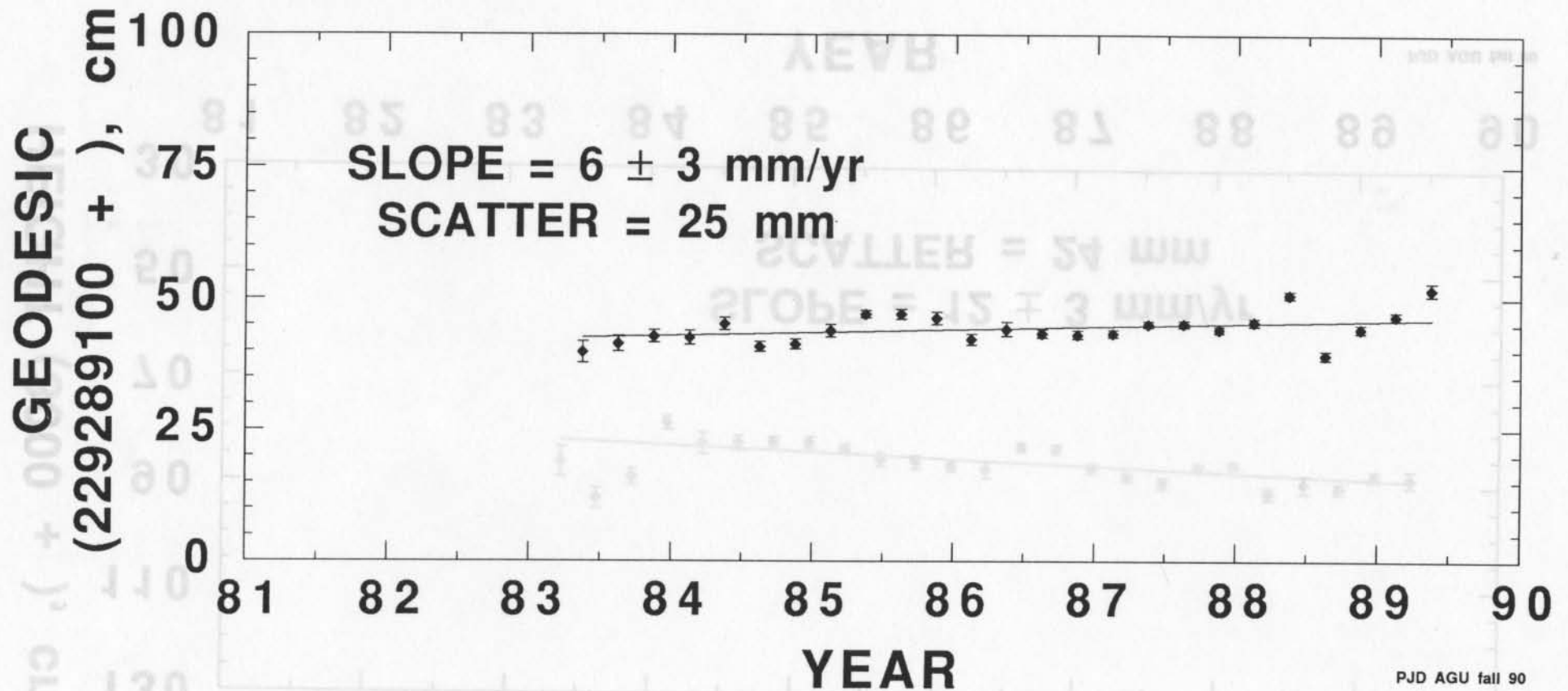
MAZATLAN, MEXICO



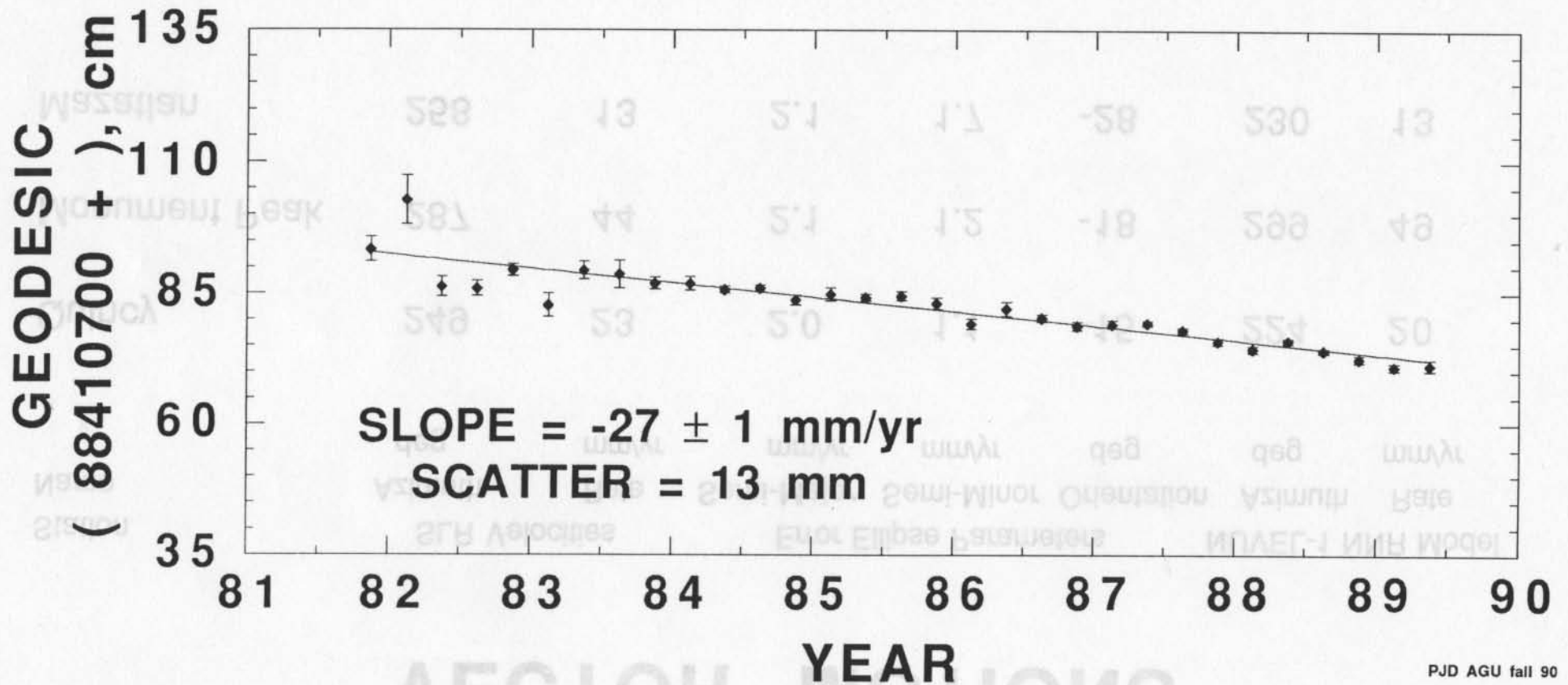
MAZATLAN, MEXICO



QUINCY TO MAZATLAN



QUINCY TO MONUMENT PEAK



VECTOR MOTIONS

Station Name	SLR Velocities		Error Ellipse Parameters			NUVEL-1 NNR Model	
	Azimuth deg	Rate mm/yr	Semi-Major mm/yr	Semi-Minor mm/yr	Orientation deg	Azimuth deg	Rate mm/yr
Quincy	249	23	2.0	1.1	-15	224	20
Monument Peak	287	44	2.1	1.2	-18	299	49
Mazatlan	258	13	2.1	1.7	-28	230	13

CONCLUSIONS

Quincy exhibits a northward component compared to the NUVEL-1 model, which combines with excess southerly motion at Monument Peak to diminish their predicted approach rate from 45 mm/yr to 27 mm/yr. Mazatlan's horizontal behavior is similar to Quincy, it's companion on the North American Plate, but the results indicate evidence of uplift at the Mexican station. Our analysis shows that temporal variations in station position which could affect orbit determination for low Earth satellites can be adequately monitored using LAGEOS data.