GFO-1 ORBIT DETERMINATION AND ANALYSIS

Averaged statistics for OSU orbit, RA time bias, range bias, sea state bias

SLR rms	Crossover rms	RA rms	Time bias* (ms)	RA bias (cm)	SSB
4 cm	7-9 cm	14 cm	<1.5	0+/–5	3% SWH

*Dec 6-22, 99; Feb 12-28, 00 Data

Selected orbit (3-day arcs) comparison (different Orbits)

		OSU Orbit (TEG3)	*IGDR (NASA POE Orbit)*
Dec 18-20, 1999	SLR rms	3.8 cm	
	CX rms	8.4 cm	8.9 cm
Feb 15-17, 2000			
	SLR rms	4.4 cm	
	CX rms	8.7 cm	8.6 cm

Estimated GFO Radial Orbit Error

$$xover_{rms}^2 = \sigma_{orbit}^2 + \sigma_{nonorbit}^2 = (8cm)^2$$

For GFO: $\sigma_{nonorbit} \approx 6cm \Rightarrow \sigma_{orbit} \approx 5cm$