TOPEX/POSEIDON PROJECT SATELLITE/SENSORS PERFORMANCE CHARACTERISTICS WORKSHOP #11

POD/MOE Performance Summary

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PVT

August 20 2002

JPL

Raytheon

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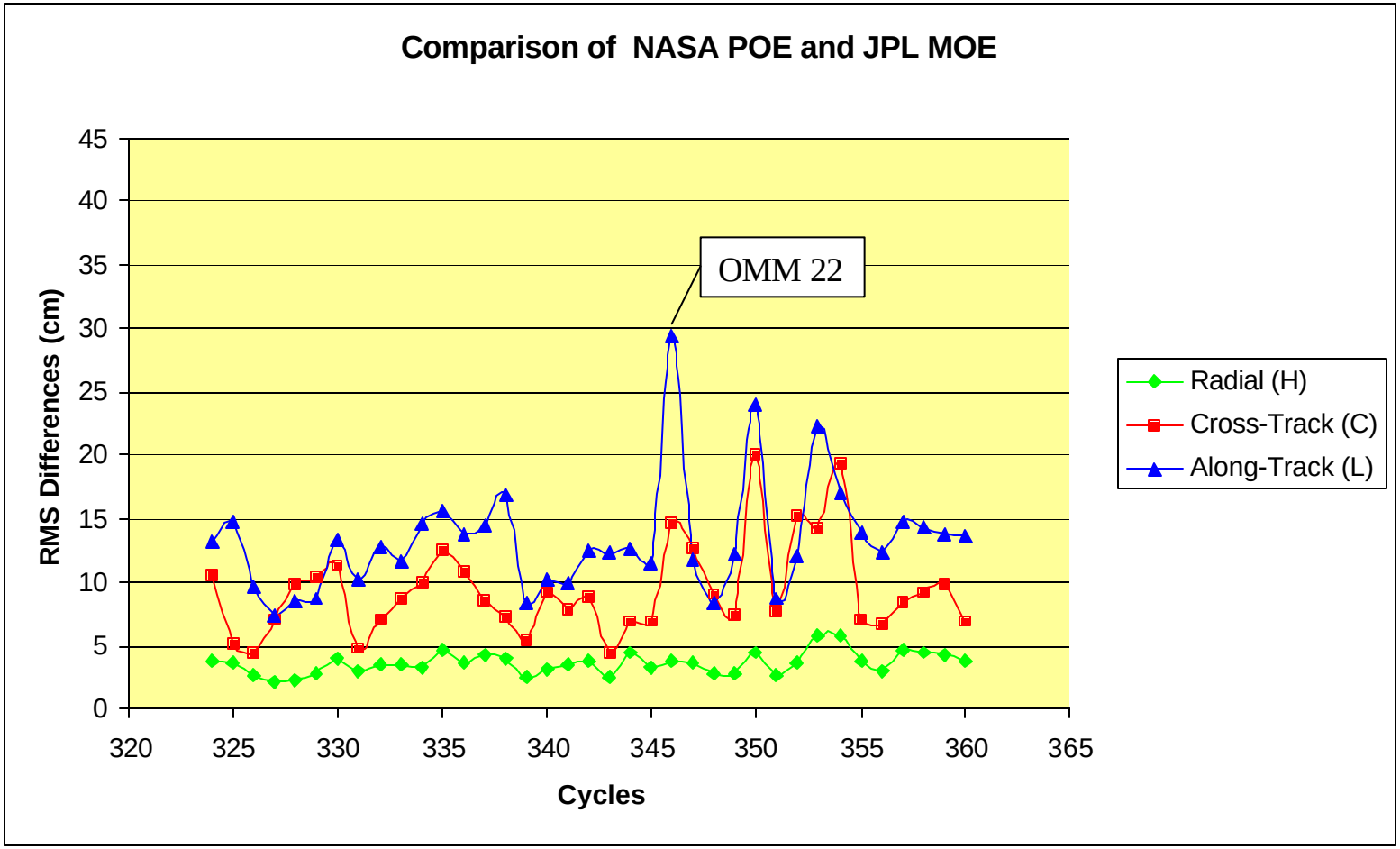
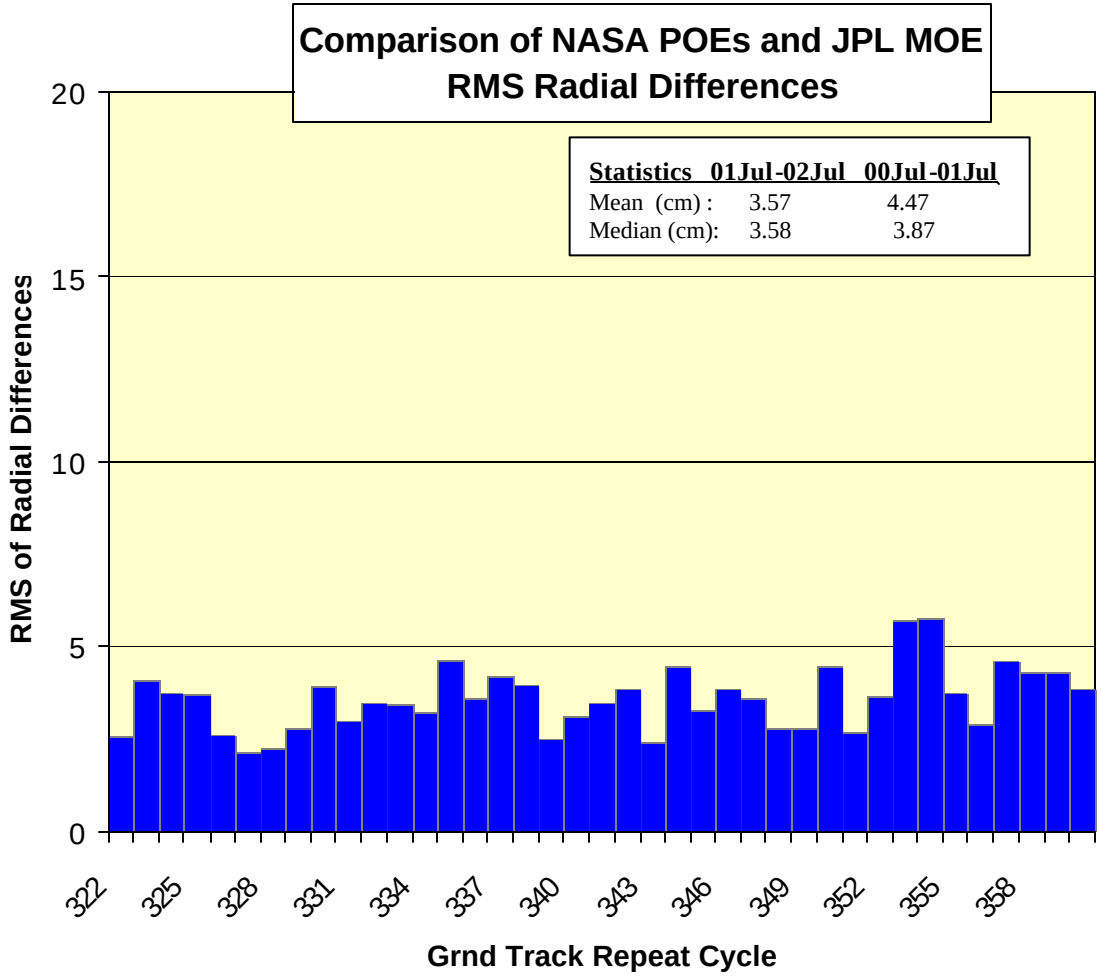
MOE/POE Comparison

- **POE Cycles:323-360**
  - **37 Cycles Delivered**
  - **Delivery ~ 30 days out-of phase with current cycle**
- **NASA GSFC POE differenced with MOE**
  - **Height (H), Cross Track (C), Along Track (L) values**
- **Focus on Radial (H) differences**

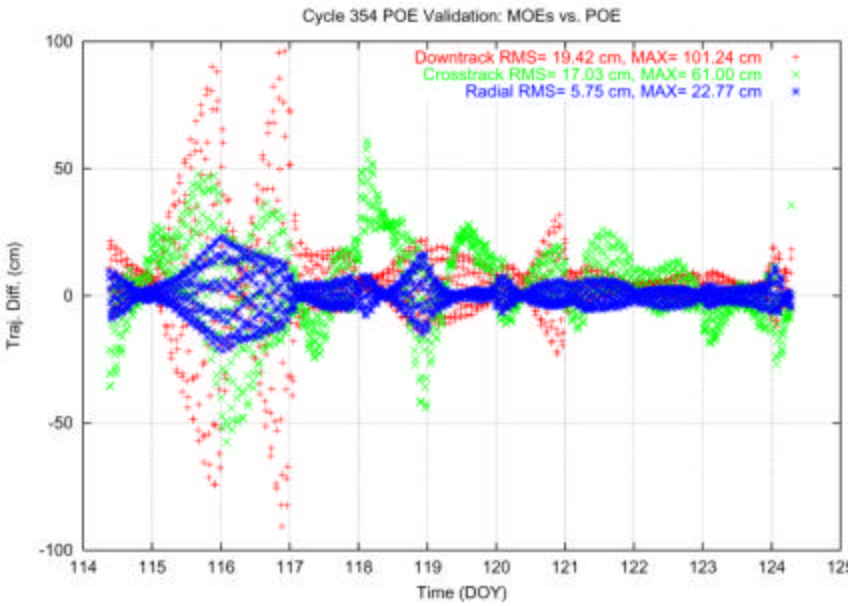
MOE/POE Comparison

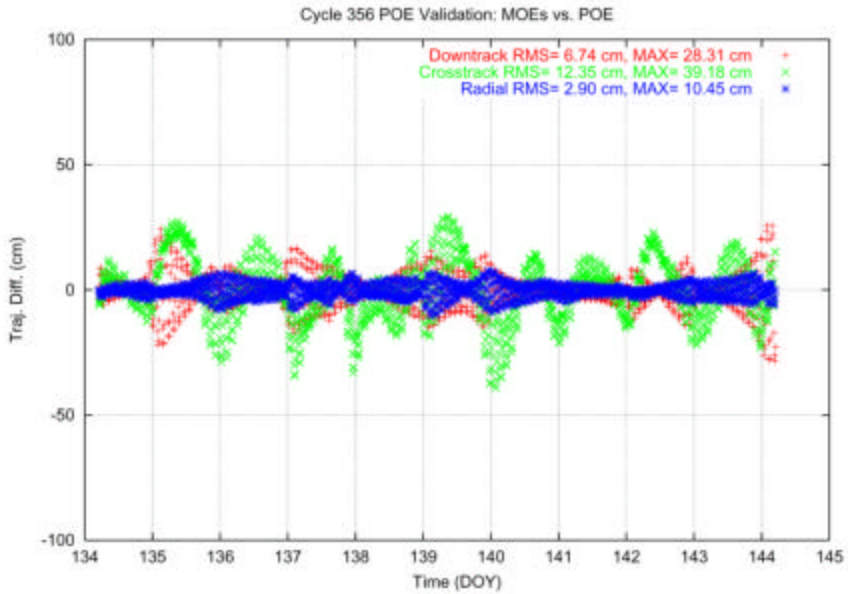


MOE/POE Comparison



MOE/POE Events & Anomalies





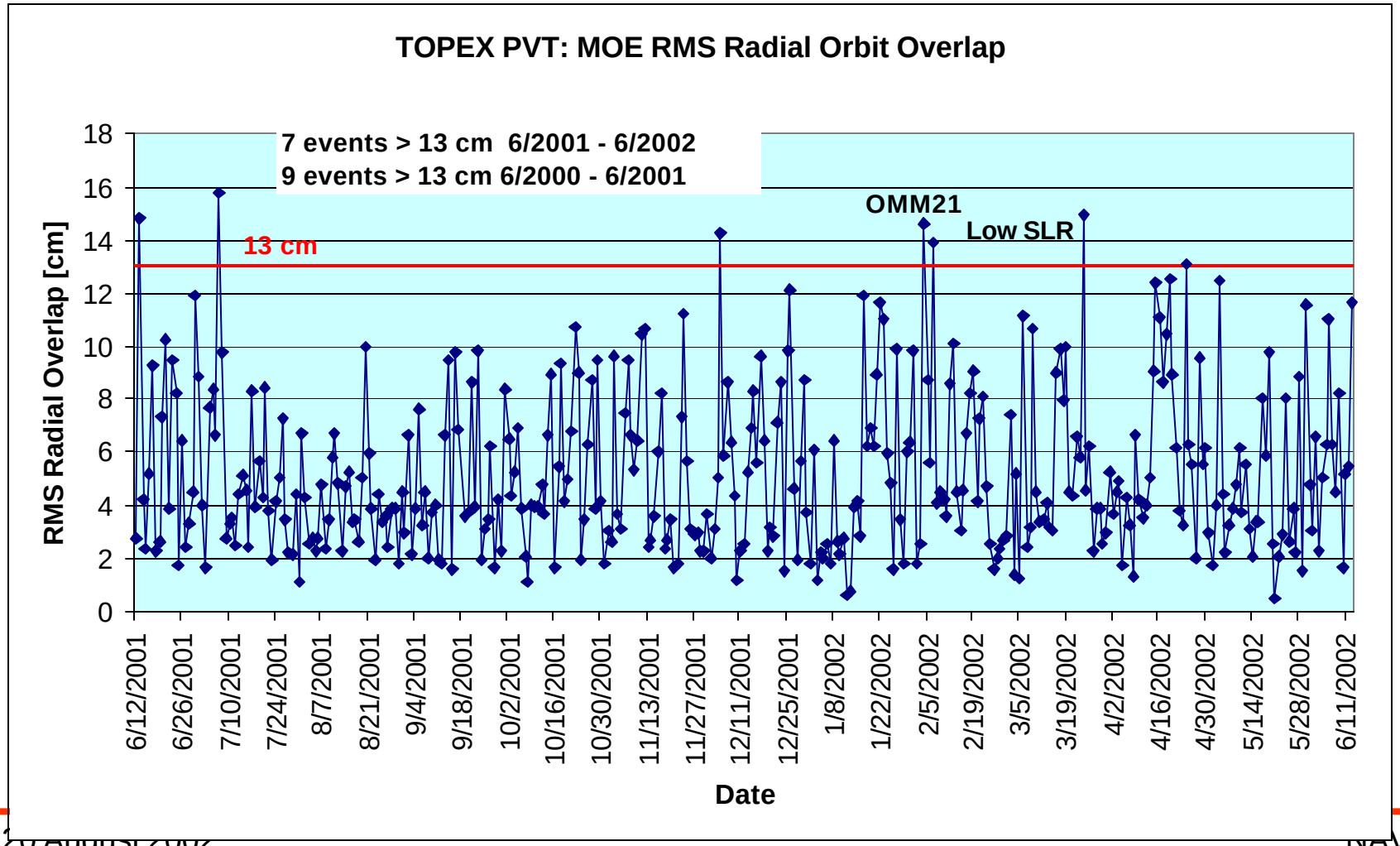
PVT Software Upgrade & Backup Host

- **Acquired a new host with latest OS (HP-UX11) and installed the new version of GIPSY/OASIS and PVT/MOE 'crons'.**
- **The results from the new host (*Phaedra*) were validated against the old host (*Theseus*) by comparing the results for more than 4 months. A validation report was submitted to SDT.**
- **Upon approval from SDT, Phaedra became operational and Theseus (upgraded) runs as backup**
- **The solutions are mirrored on both hosts daily**

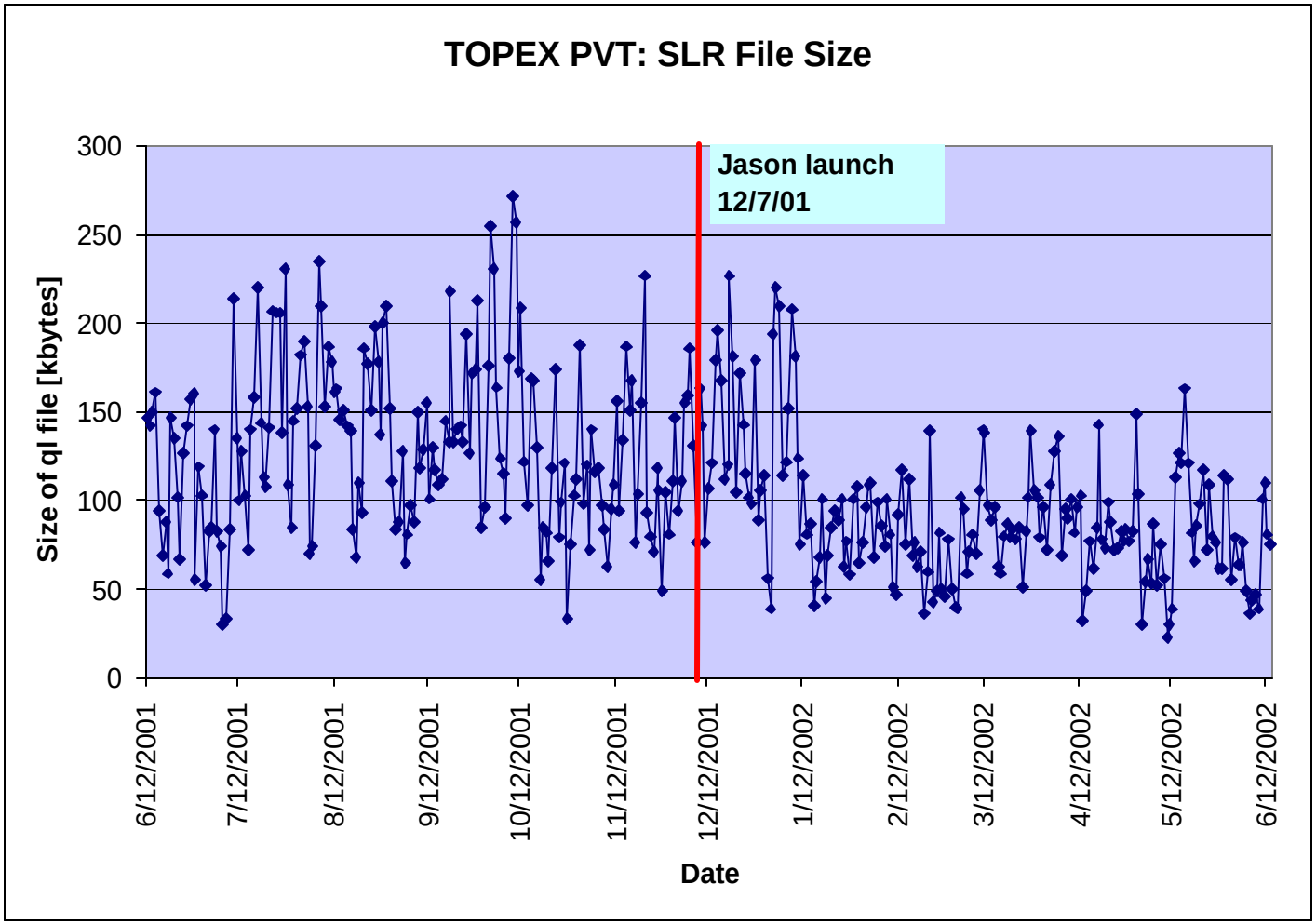
MOE Process

- **Daily 'cron' process on HP-UX 11 new host '*Phaedra*' at Raytheon**
- **Processing Sequence**
  - **ggn_as run: process GPS satellite orbits and clocks from global ground station data.**
  - **SLR-only run: TOPEX 72-hour orbit reconstruction, overlapped with previous day's orbit.**
  - **GPS+SLR run: TOPEX 1-day orbit reconstruction overlapped with previous day's orbit. [30-hr orbits]**
- **Delivery preference given to GPS+SLR solution given a radial rms overlap tolerance < 13 cm**

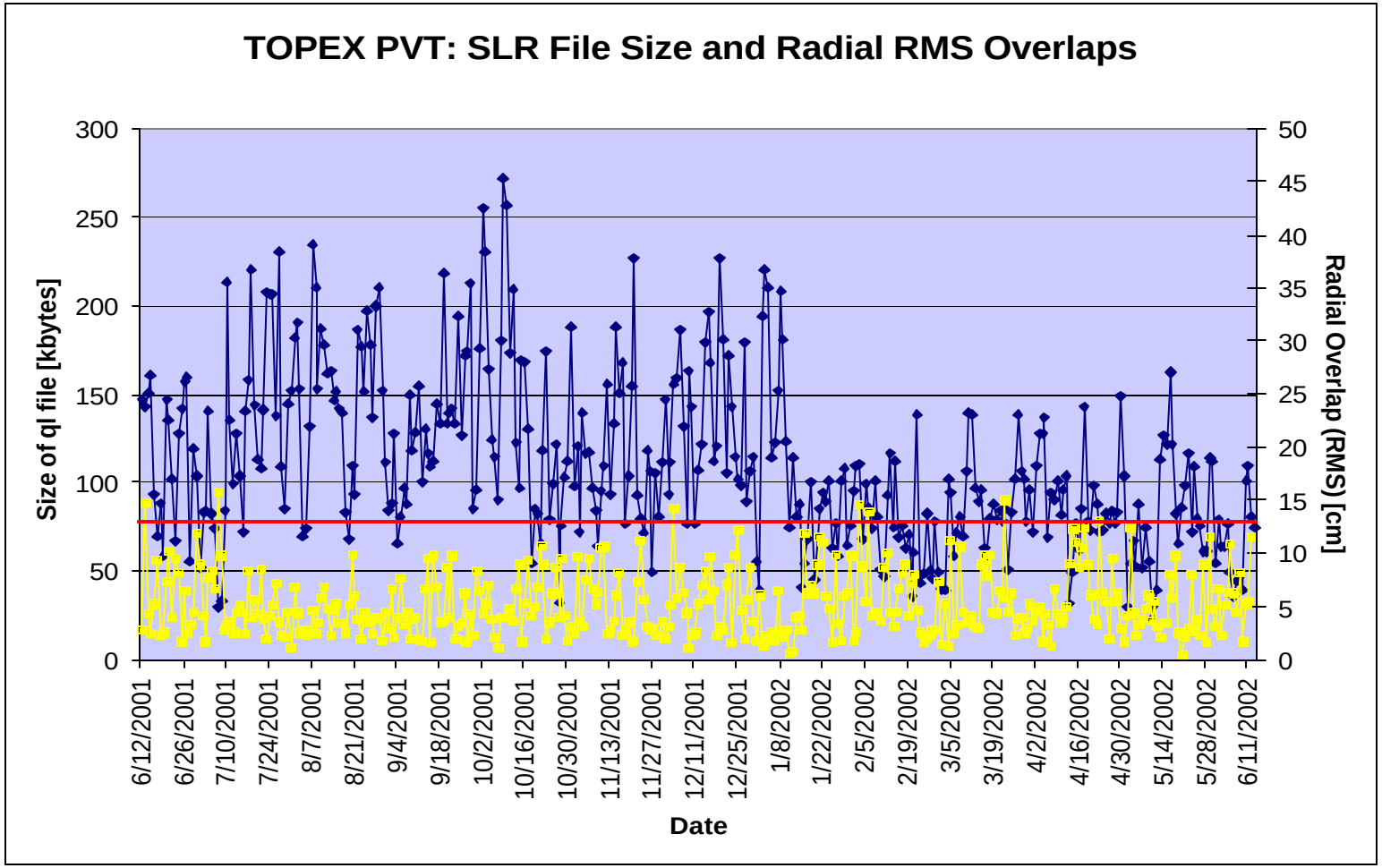
MOE Process + Results



MOE/POE Events & Anomalies



MOE/POE Events & Anomalies



Year-to-Year Comparison

	Number of Events > 13 cm RMS radial overlap	Number of GPS+SLR solutions
Jul. 2001-Jul 2002	7	309/366 84%
Jul. 2000-Jul 2001	9	239/340 70%

Conclusions

- **MOE results meet requirements:**
  - **7 events > 13 cm RMS radial overlap (versus 9 last year)**
- **GPS+SLR solutions: 84 % of the time (309/366) (versus 70% last year)**