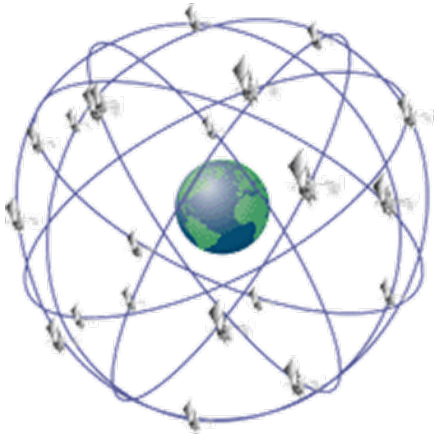


IGS Reprocessing

Goals and Results from ESA/ESOC

I. Romero, T. Springer, J. Dow, R. Zandbergen

Navigation Support Office

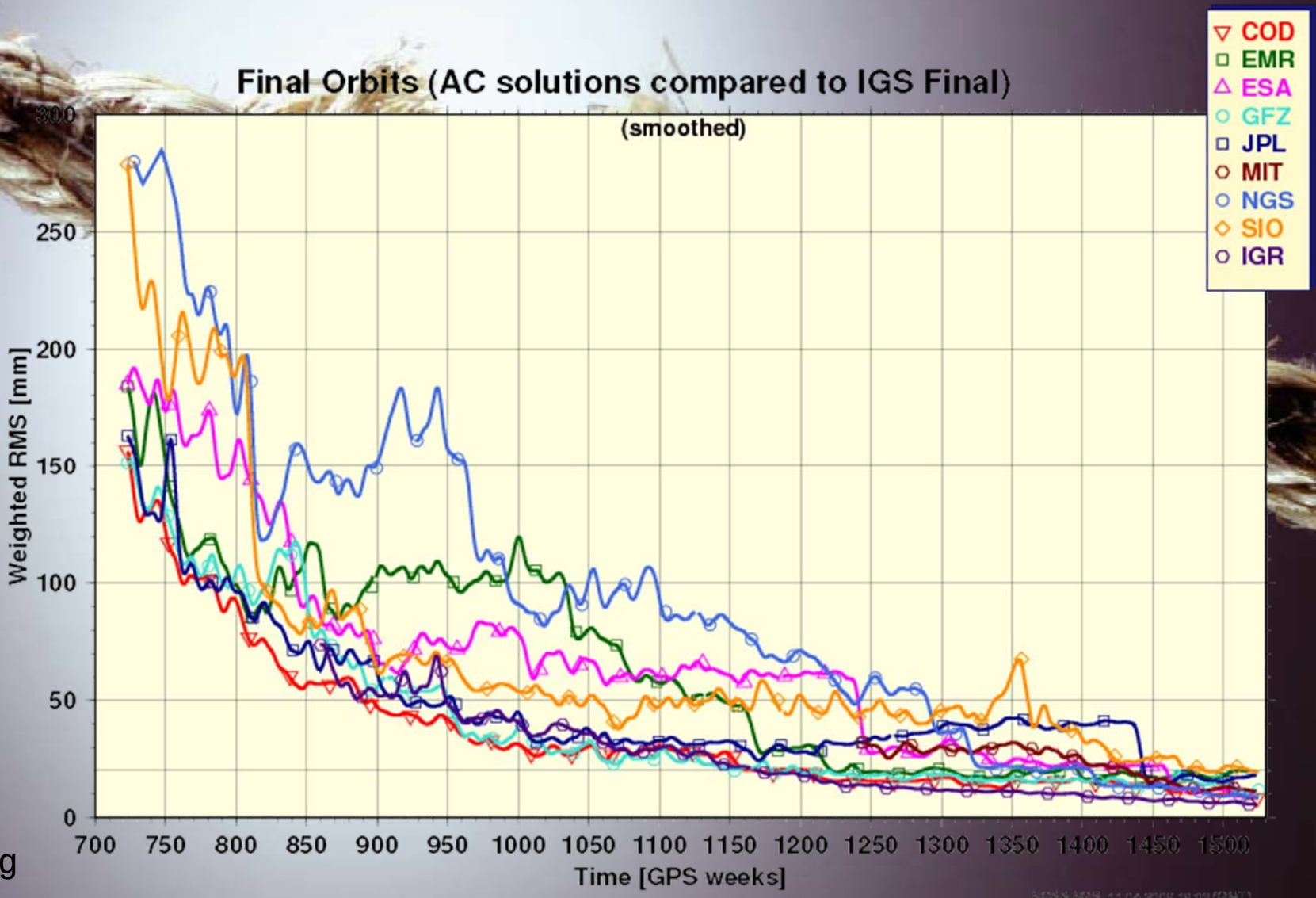
ESOC/OPS-GN

esa

EGU General Assembly 2009, Vienna

The IGS …
… helping to better understand our world.

The IGS orbits are broken …



acc.igs.org

“... although we have a mess of problems, we have great capacity - intellect and resources - to do something about them.”

Henry Ford II

‘04 - ‘05 : Absolute Antenna PCVs

2006 : Agreed products and models

‘07- ‘08 : Test period validated, ITRF08 contribution agreed

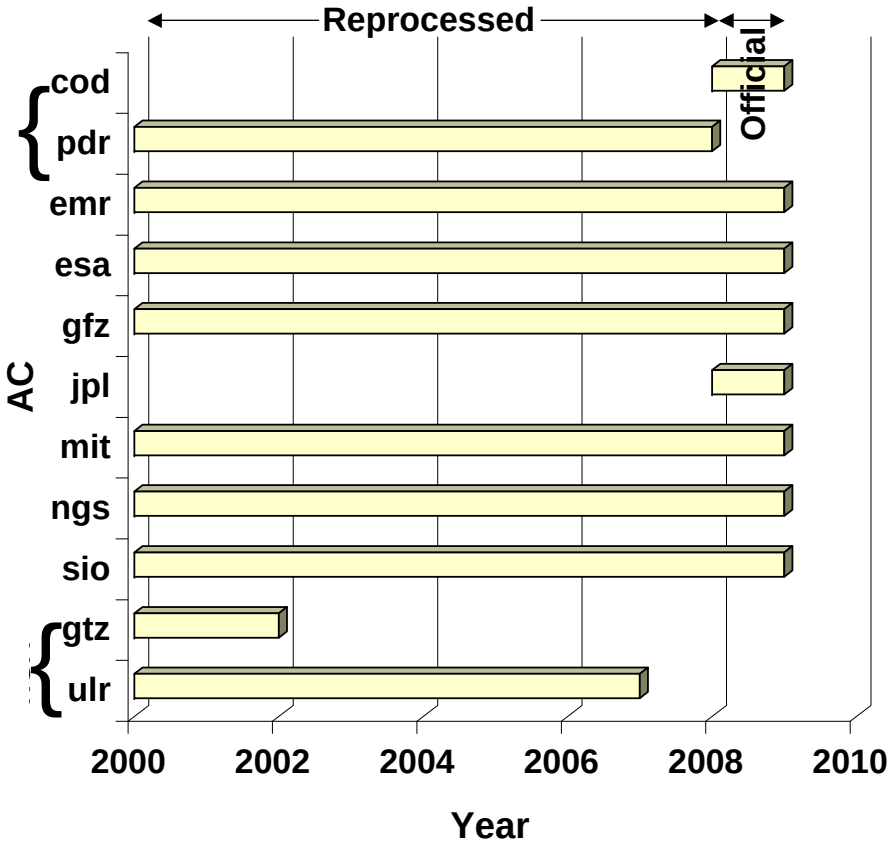
Goal ...

... generation of a consistent set of IGS products

Objectives ...

... GPS orbits, clocks, ERP, SNX
... ITRF ‘08 contribution
... to be completed by ‘09

IGS repro1 contribution to ITRF08

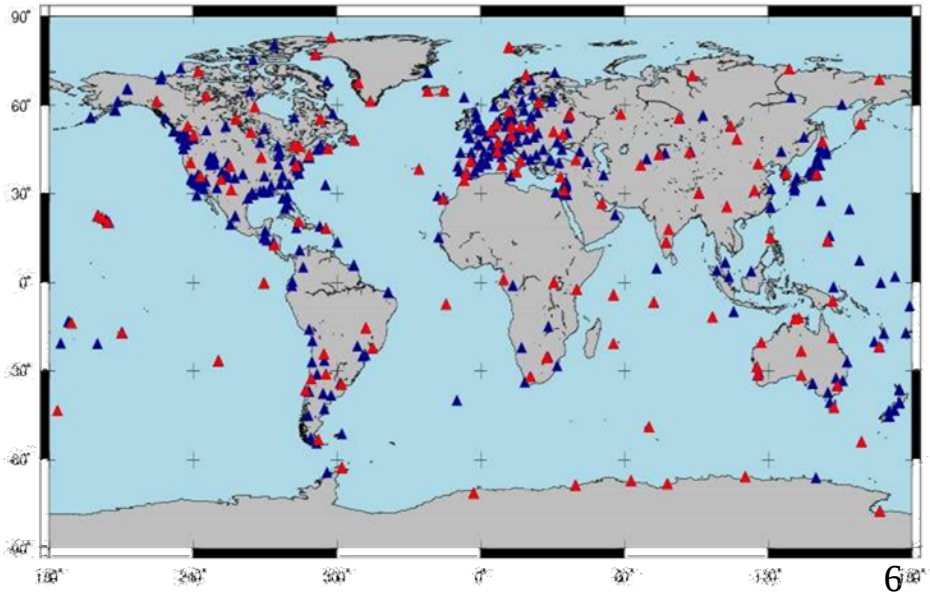


(Remi Ferland, NRCan)

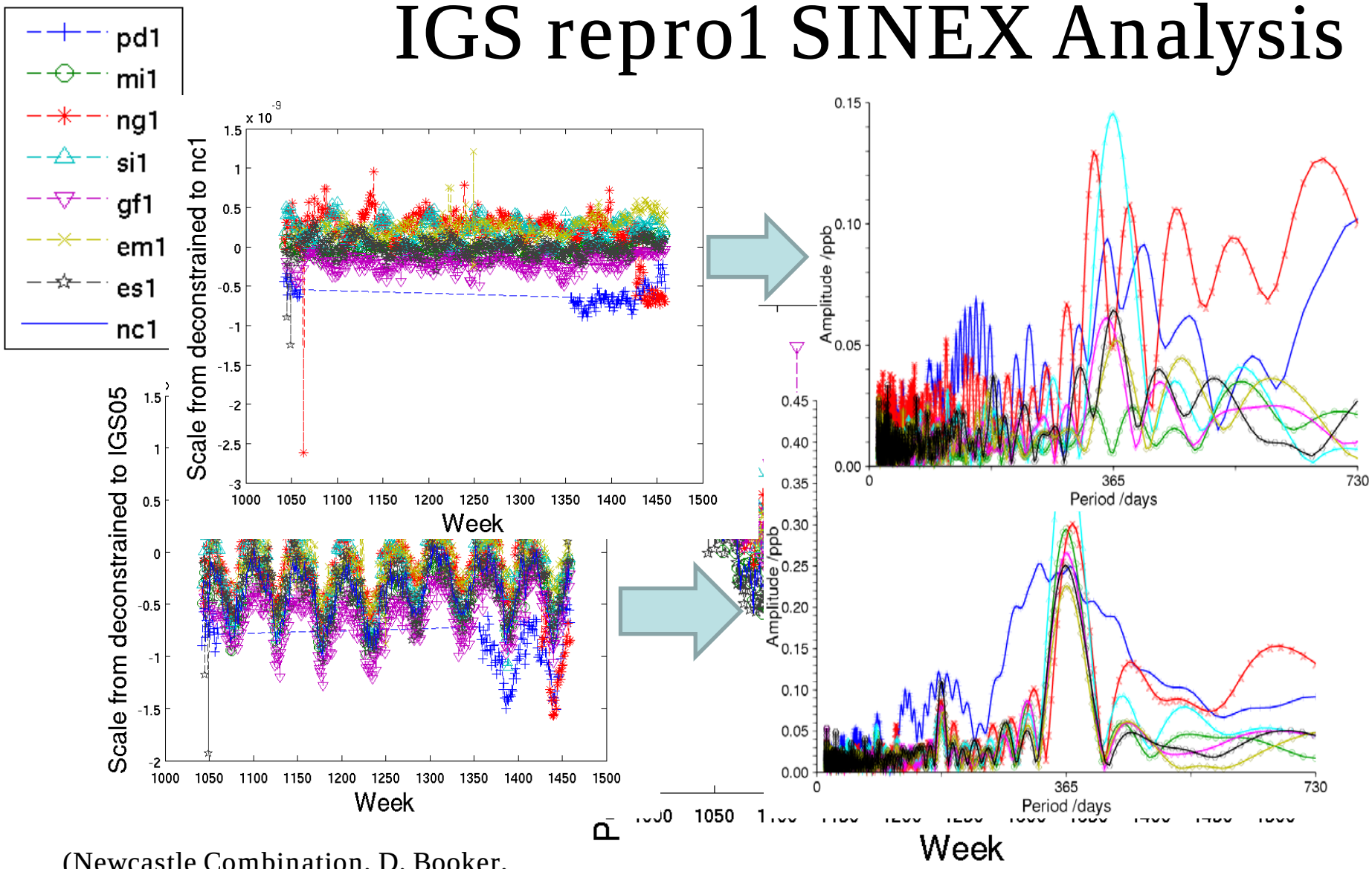
11 Analysis Centers

856 Stations processed

515 Stations contributed:



IGS repro1 SINEX Analysis



(Newcastle Combination, D. Booker, D. Lavallée, P. Clarke)

The new ESOC IGS software ...

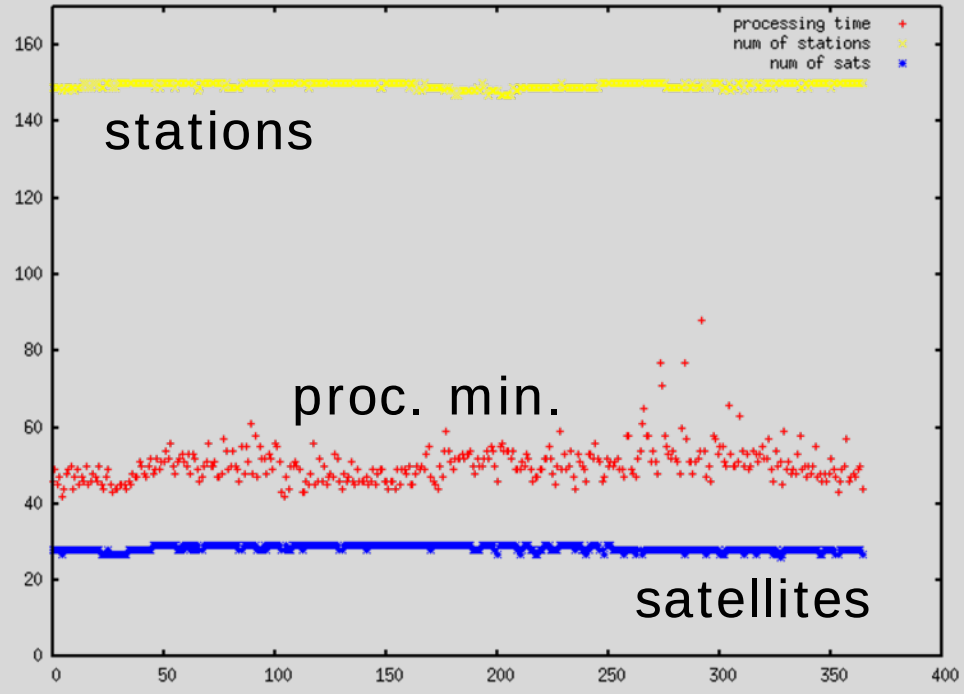
- NAPEOS : Navigation Package for Earth Observation Satellites
- Used in ESA LEO POD
- Fortran 90/95
- Multi-platform

Our reprocessing workhorse ...

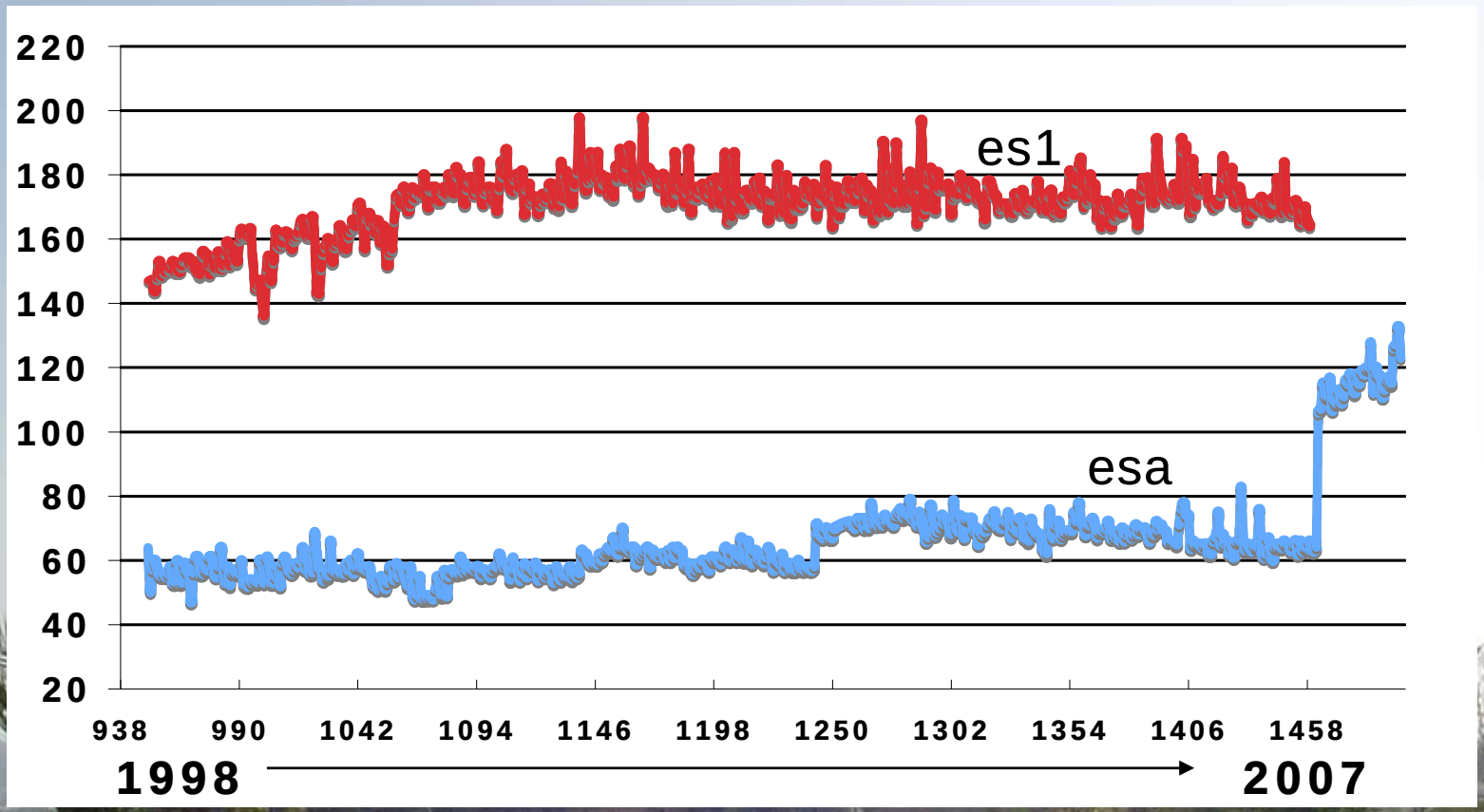
Intel QuadCore 2,4 GHz PC
Ubuntu / ifort / 8Gb / 1 Tb

150 stations/day in 50 min..

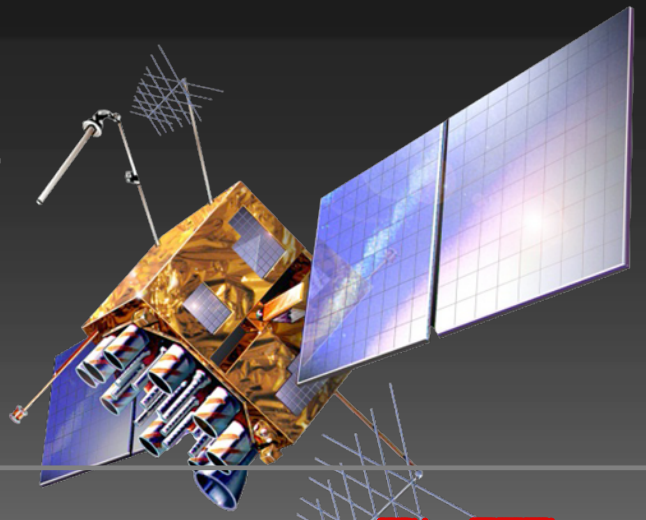
8 yrs in ~25 days !!

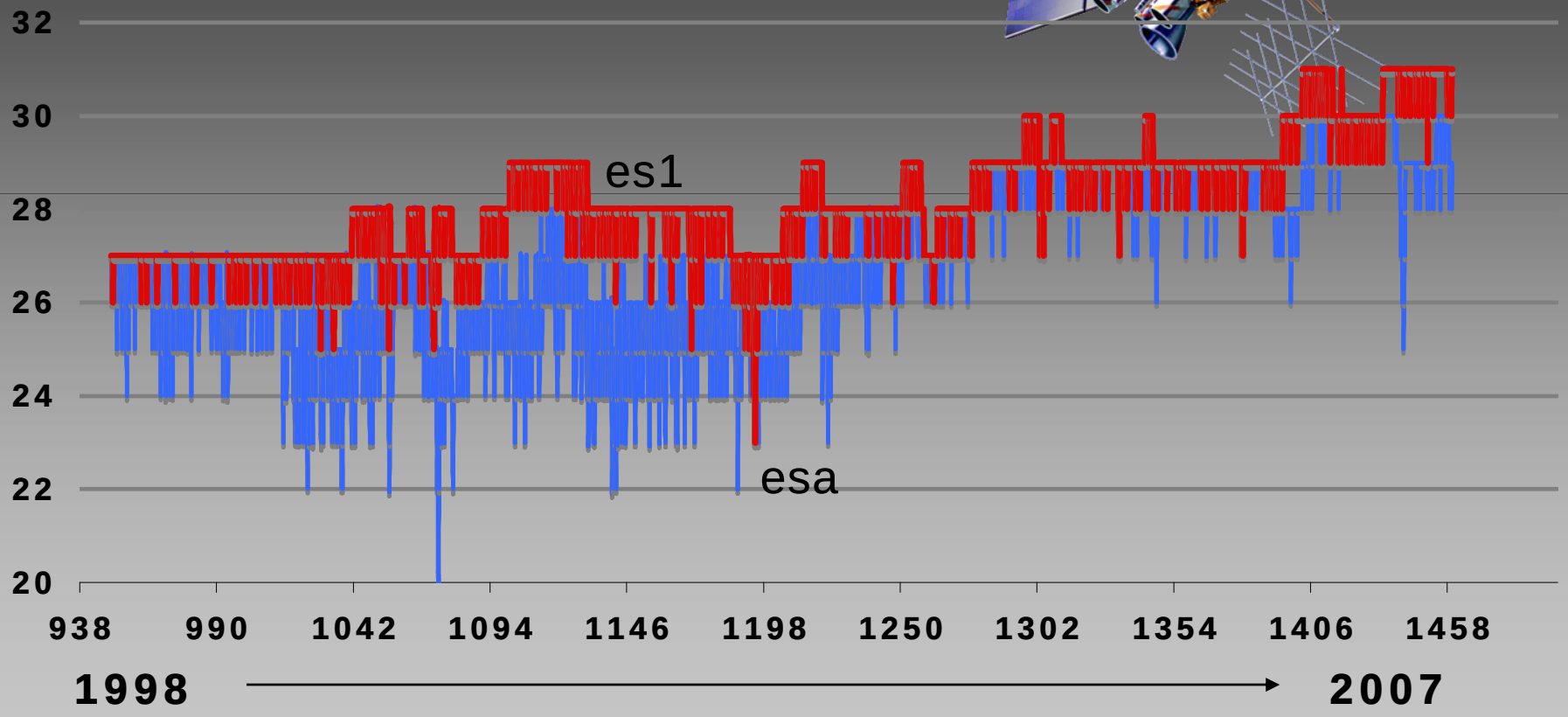


Using more stations ...

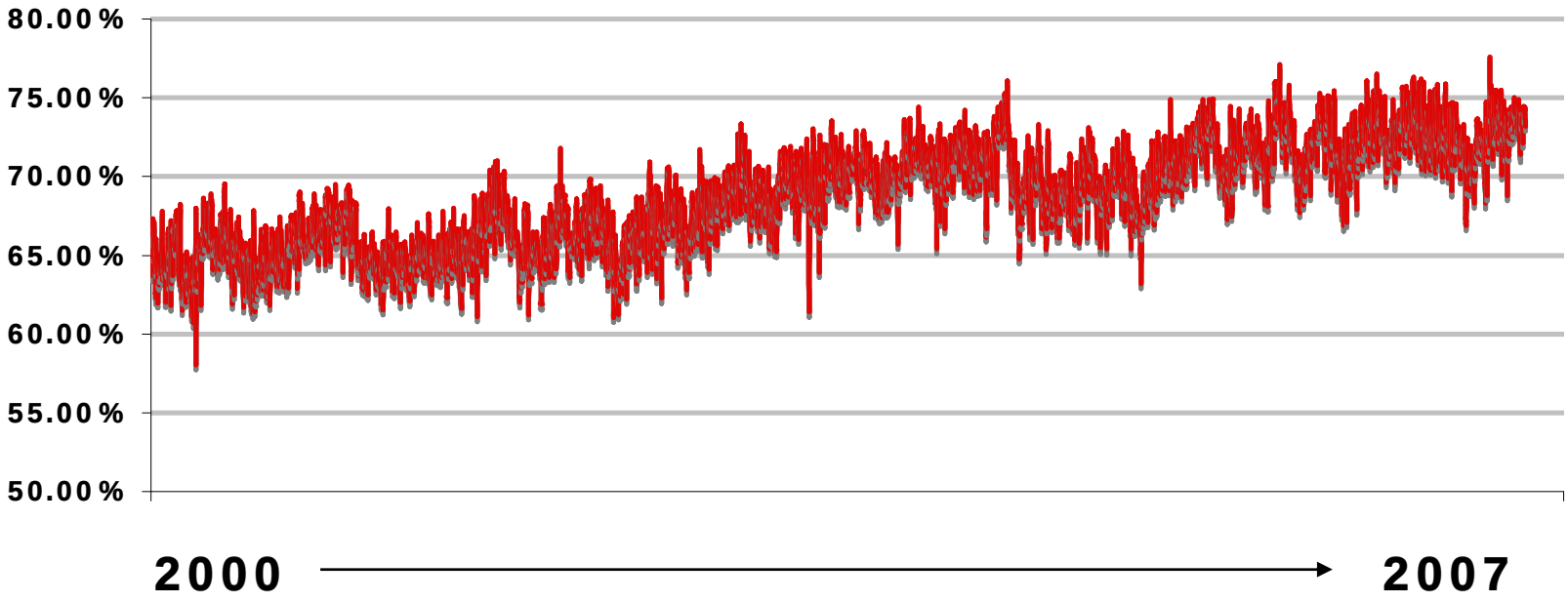


… more satellites …

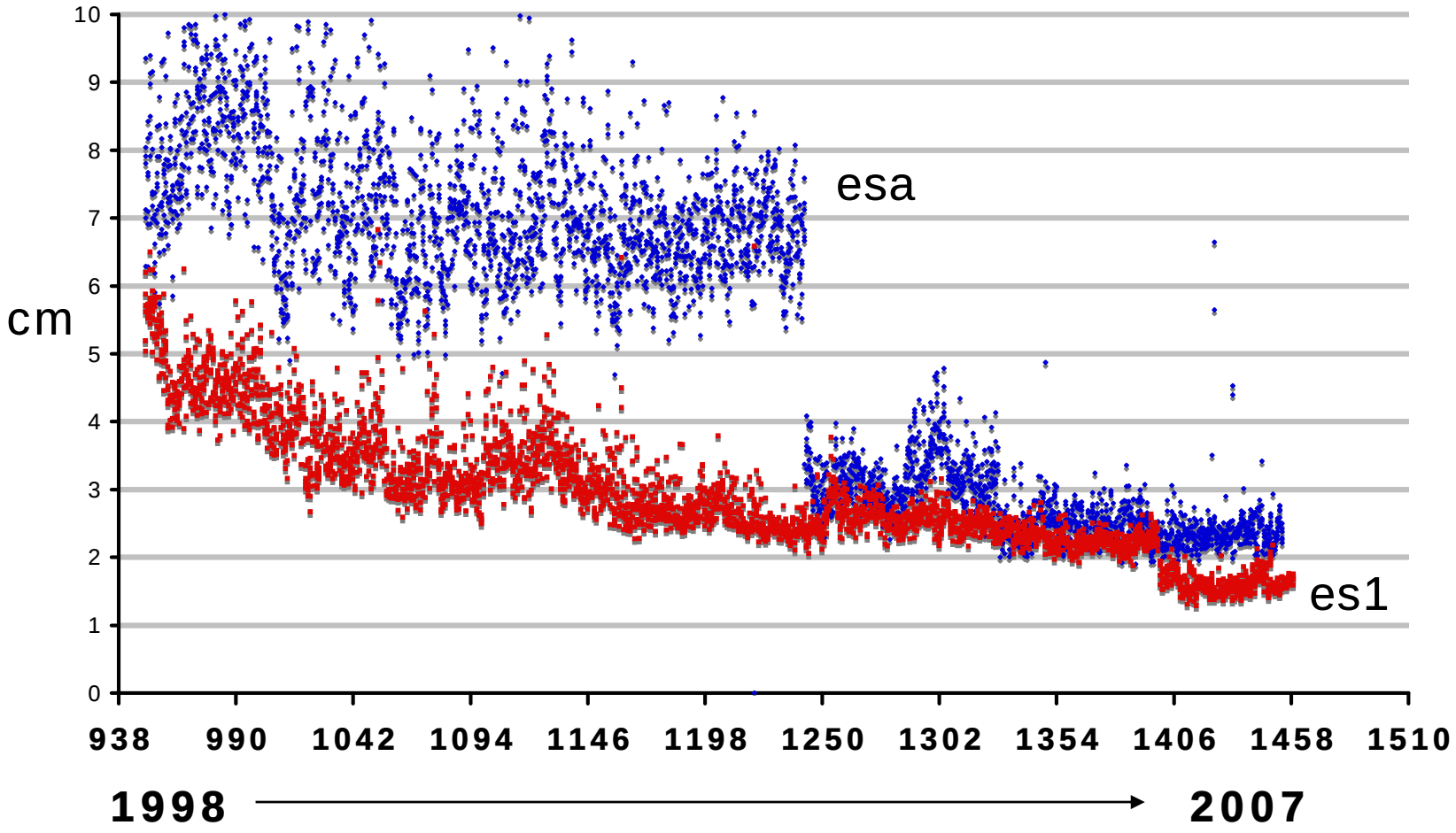




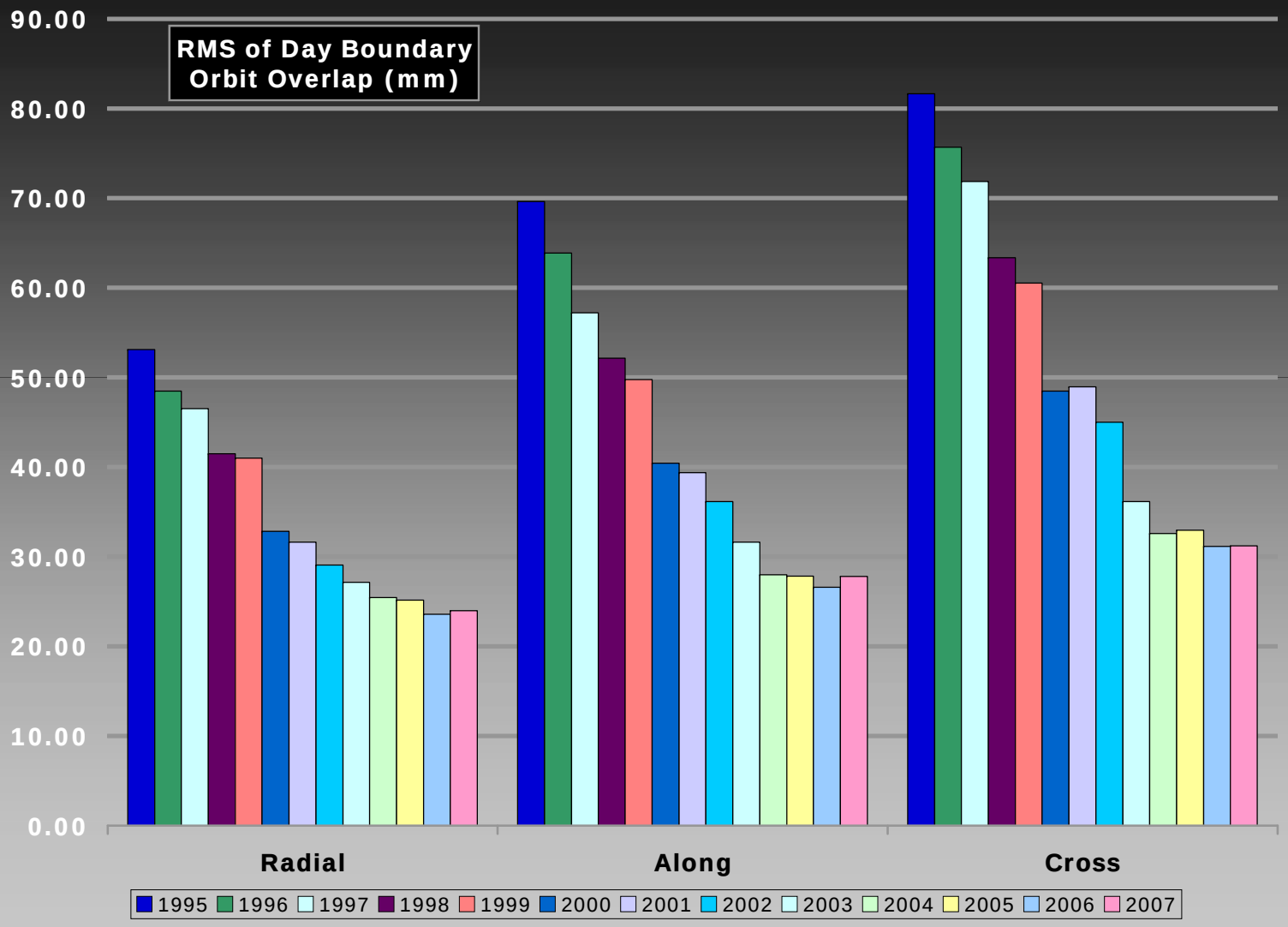
… ambiguities resolved …



… better accuracy …

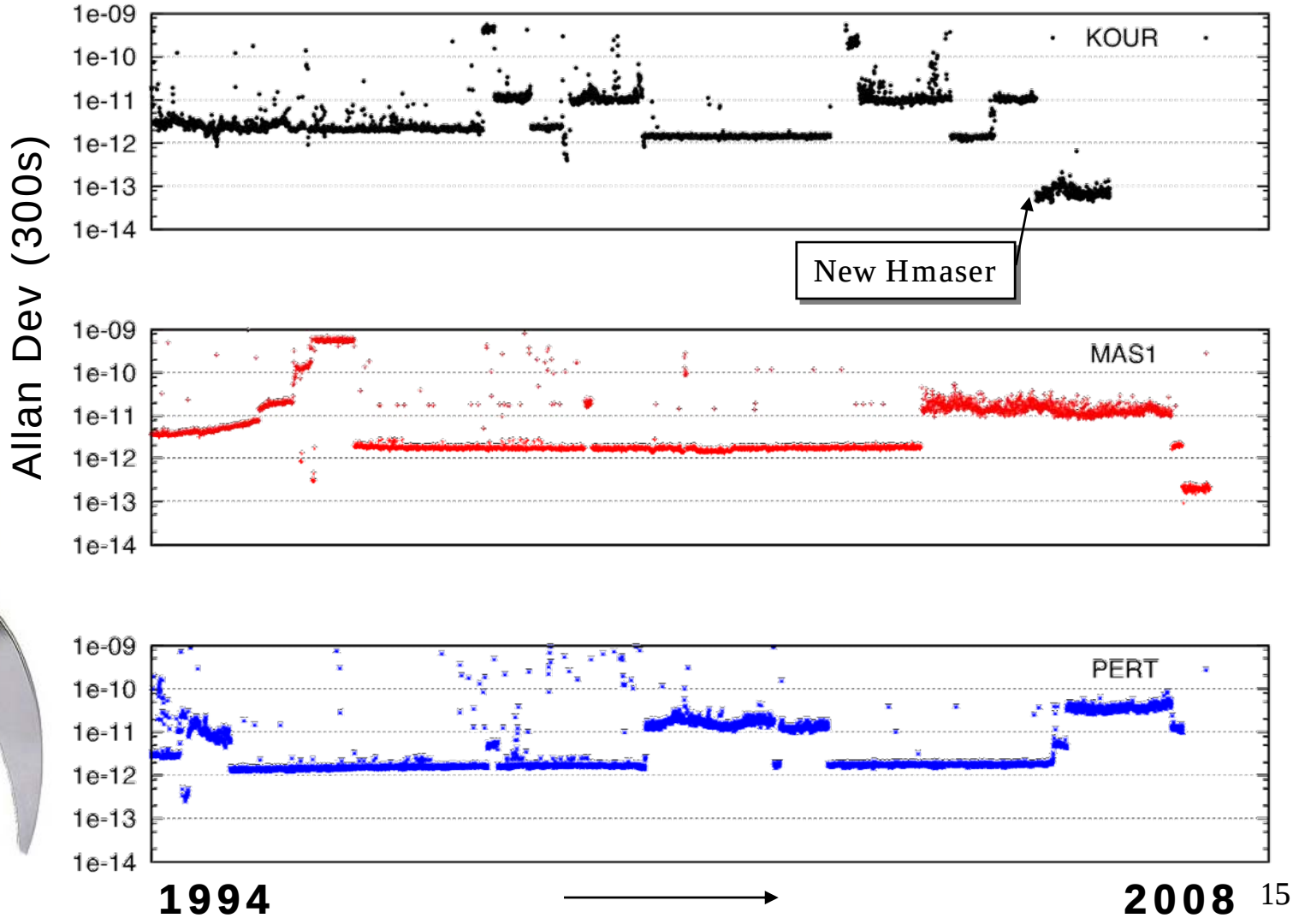


… and better consistency.

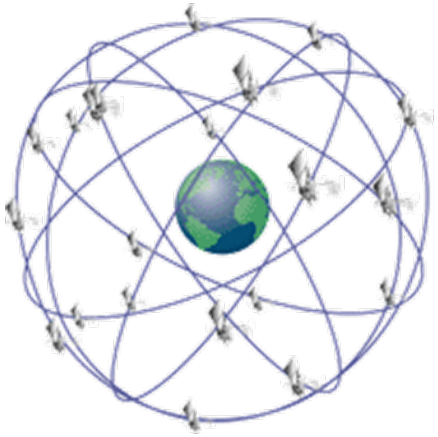


Uncovering the real clock story …

Cesium-to-internal undocumented jumps



Finally ...



... IGS repro1 making good progress

... a challenge and opportunity

... ITRF ‘08 benefits from IGS repro1

... IGS repro1 official in early 2010

... new models for repro2 (2010/2011)

Thanks!