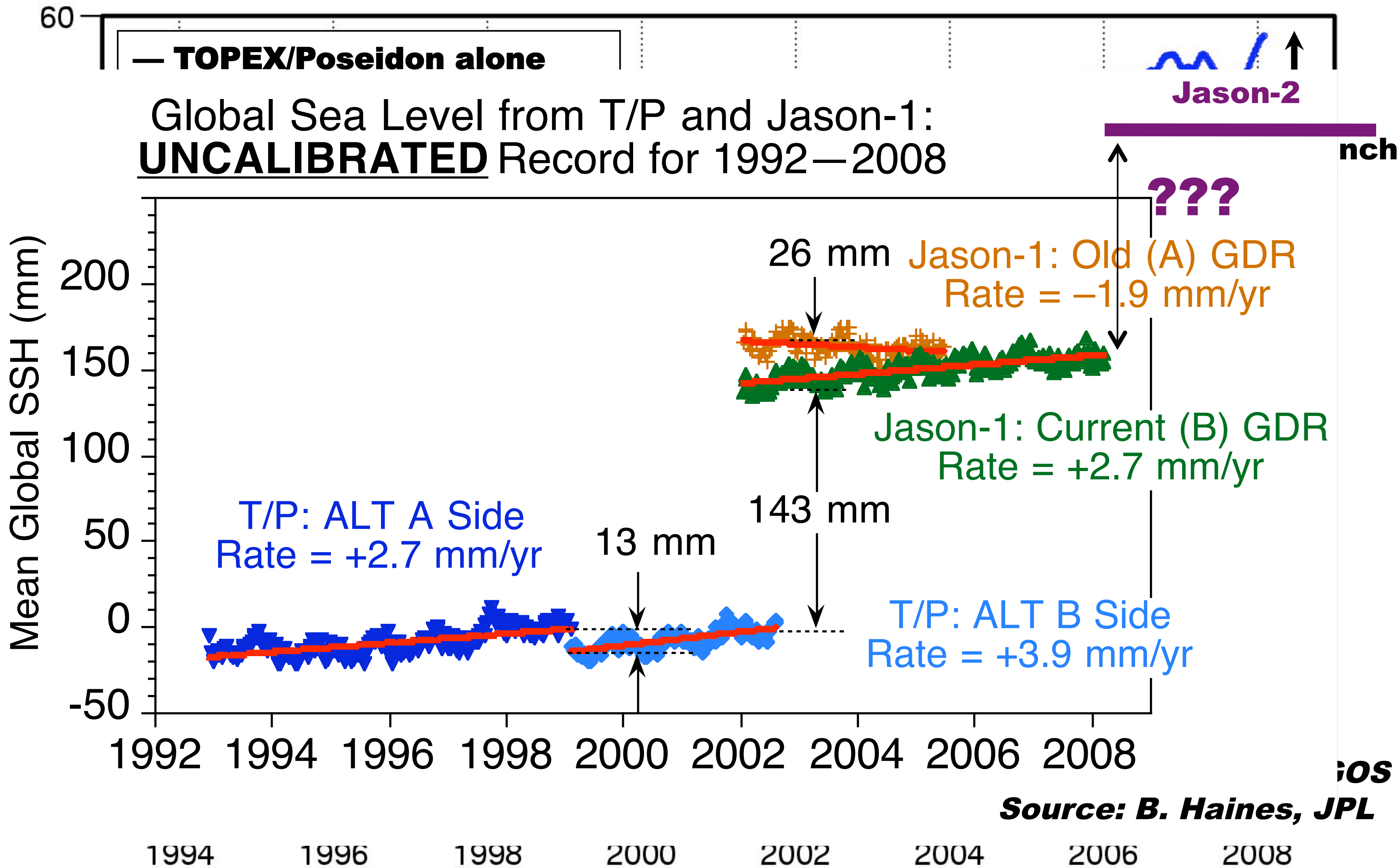
Long-term observations of the Mean Sea Level

- ✓ **Long, accurate and homogeneous time series is needed**
- ✓ **Lifetime of satellites is nominally about five years**

=> The link (calibration and validations) between missions is essential



Source: B. Haines, JPL

Calibration/Validation and data consistency

FROM SPACE TO SEA

✓ **Orbit (gravity field, tracking data, ...)**

✓ **Range (bias, retracking, ...)**

✓ **Corrections**

- **Ionosphere**
- **Troposphere (Dry and Wet)**
- **Sea State Bias**
- **Other corrections**

Toward a better consistency between grand father, father and son

In terms of Sea Surface Height bias
But also in terms of stability (models, instruments, ...)

Goal is to link altimetric missions at few mm and below 1 mm/yr level

Calibration/Validation and data consistency

Will focus on

- **Joint analysis of Jason-1 and Jason-2 data from the tandem verification phase.** Emphasis should be placed on unique insights afforded by the cancellation of common mode errors in formation flight.

- **Validation of all available Jason-2 test GDRs**, including data collected after the end of the verification phase. We are particularly seeking insight on any potential emerging trends in the data on local, regional or global scales.

- **Validation of the complete set of the Jason-1 GDR-C products**. Definitive calibration time series are needed, along with estimates of geographically correlated errors, in order to **reconcile local and global results and arrive at a unified error assessment**.

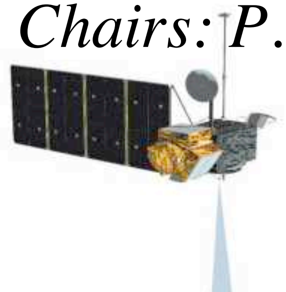
- **Validation of Jason-1 GDR-C data on the interleaving ground track.**

- **Validation of available reprocessed T/P data**. Of particular interest are the impacts of these products on reducing relative GCE observed in the Jason-1/TP (2002) tandem verification phase.

In order to facilitate comparisons among various results, contributors should **focus on results from the official data products**. Complementary results from alternative sources are sought, however, if they help to explain errors in the official products.

Local calibration/validation (*focusing on bias*): Monday, June 22

Chairs: P. Bonnefond, B. Haines, S. Nerem



1400	HAINES Bruce	The Harvest Experiment: Calibration of the Climate Data Record from TOPEX/POSEIDON, Jason-1 and OSTM
1415	BONNEFOND Pascal	Absolute Calibration Of Topex/Poseidon, Jason-1 And Jason-2 Altimeters In Corsica
1430	WATSON Christopher	In-Situ Calibration at the Bass Strait Site, Australia
1445	MERTIKAS Stelios	Absolute altimeter calibration for Jason satellites using the GAVDOS permanent facility
1500	JAN Gwenaele	OSTM/Jason-2 sea surface height bias estimated by a regional in situ CalVal technique
1515	HAN Weiqing	Comparisons of altimeter data, reconstructed sea level and tide gauge data in the Indian Ocean
1530	ABLAIN Michaël	Quality assessment of tide gauge and altimeter measurements through SSH comparisons
1545	LEULIETTE Eric	Tide gauge and intersatellite calibrations of Jason-1 and Jason-2 geophysical data records
1600	BECKLEY Brian	Assessment of Jason-1 and OSTM global verification phase sea surface height collinear residuals
1610		Adjourn

Global calibration/validation (*focusing on corrections quality assessment and error budget assessment*): Tuesday, June 23

Chairs: S. Desai, N. Picot

1100	PHILIPPS Sabine	Global Statistical Jason-2 Assessment and Cross-calibration with Jason-1: Parameter Analysis and System performances
1120	DETTMERING Denise	Global cross calibration of Jason-1/2 GDR-C data
1135	DECARVALHO Robert	Global cross calibration and validation of Jason-1 and Jason-2/OSTM products
1150	OLLIVIER Annabelle	Jason-1 / Jason-2 / Envisat Cross-Calibration
1205	LABROUE Sylvie	Calval analysis of latest release of TOPEX retracked data
1220	All	Discussion
1230		Adjourn

Poster session: 18 posters

ABLAIN	Michael	Quality assessment of tide gauge and altimeter measurements through SSH comparisons
BECKLEY	Brian	Assessment of Jason-1 and OSTM global verification phase sea surface height collinear residuals
BONNEFOND	Pascal	Absolute Calibration Of Topex/Poseidon, Jason-1 And Jason-2 Altimeters In Corsica
BOSCH	Wolfgang	Geographically correlated errors from multi-mission crossover analysis
COMMIEN	Ludivine	Statistical quality assessment of Jason-1 GDR version C
DECARVALHO	Robert	Global cross calibration and validation of Jason-1 and Jason-2/OSTM products
FAUGÈRE	Yannice	Analysis of Jason-1 / Envisat geographically correlated differences
HAINES	Bruce	The Harvest Experiment: Calibration of the Climate Data Record from TOPEX/POSEIDON, Jason-1 and OSTM
LABROUE	Sylvie	Calval analysis of latest release of TOPEX retracked data
MITCHUM	Gary	Tide gauge estimates of altimeter stability: Improved methods and updated results
MORROW	Rosemary	Regional calval of Jason-1 & Jason-2 data at the centre de topographie des océans et de l'hydrosphère
OLLIVIER	Annabelle	Jason-1 / Jason-2 / Envisat Cross-Calibration
PAVLIS	Erricos C.	OSTM/Jason-2 Cal/Val results from the Eastern Mediterranean altimeter calibration network - eMACnet
PHILIPPS	Sabine	Global Statistical Jason-2 Assessment and Crosscalibration with Jason-1: Parameter Analysis
PHILIPPS	Sabine	Global Statistical Jason-2 Assessment and Crosscalibration with Jason-1: System performances
RAY	Richard	Calibration/validation of Jason-2 significant wave heights
SIBTHORPE	Ant	Calibration and validation of the Jason-2/OSTM AMR using terrestrial GPS stations
ZHANG	Jason	Precise orbit determination of Jason-1 at the bass strait calibration site from trials of the French

Jason-1 - T/P Sea Surface Height

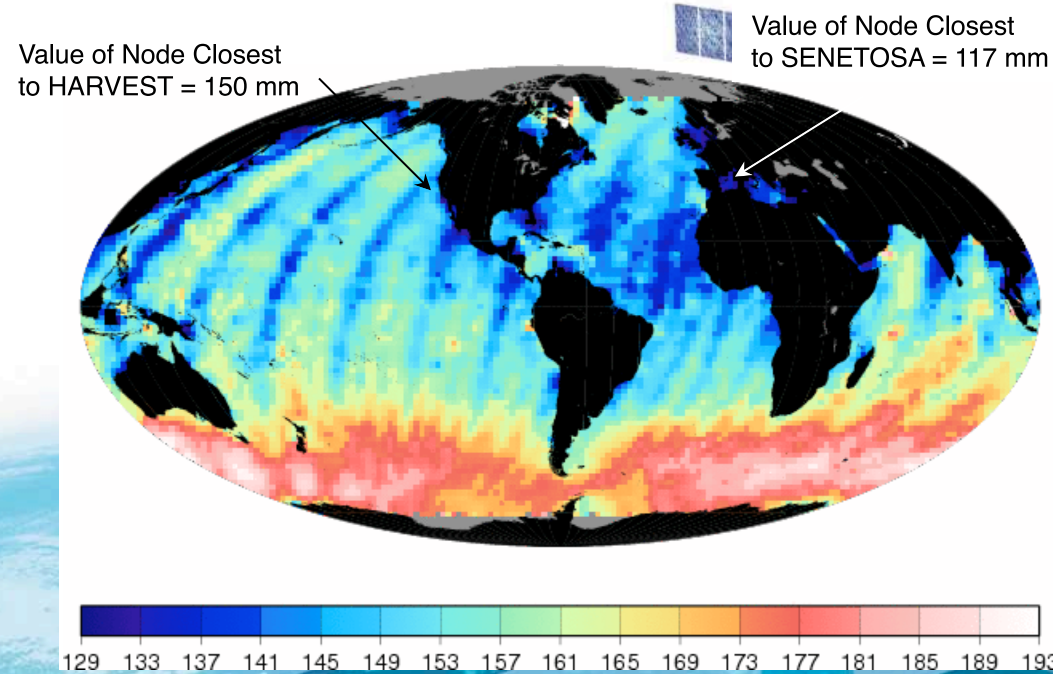
Formation Flying Phase (Jason-1 Cycles 1-21)

Ascending Tracks

NORTH
Mean = 148.1 mm
σ = 12.7 mm

TROPICS
Mean = 152.1 mm
σ = 11.4 mm

SOUTH
Mean = 172.5 mm
σ = 10.9 mm

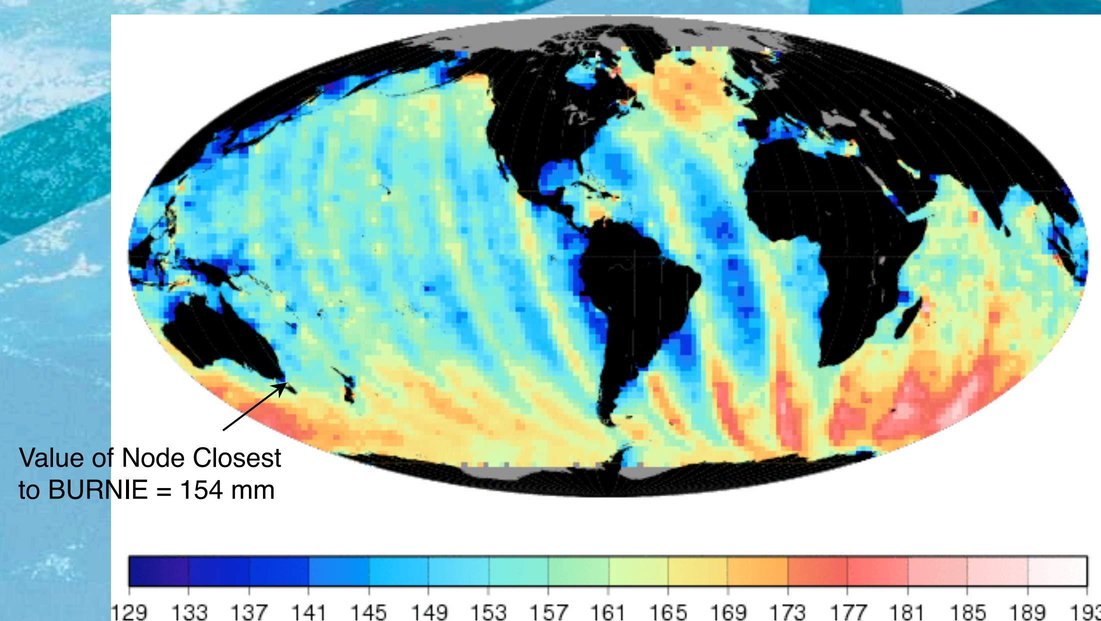


Descending Tracks

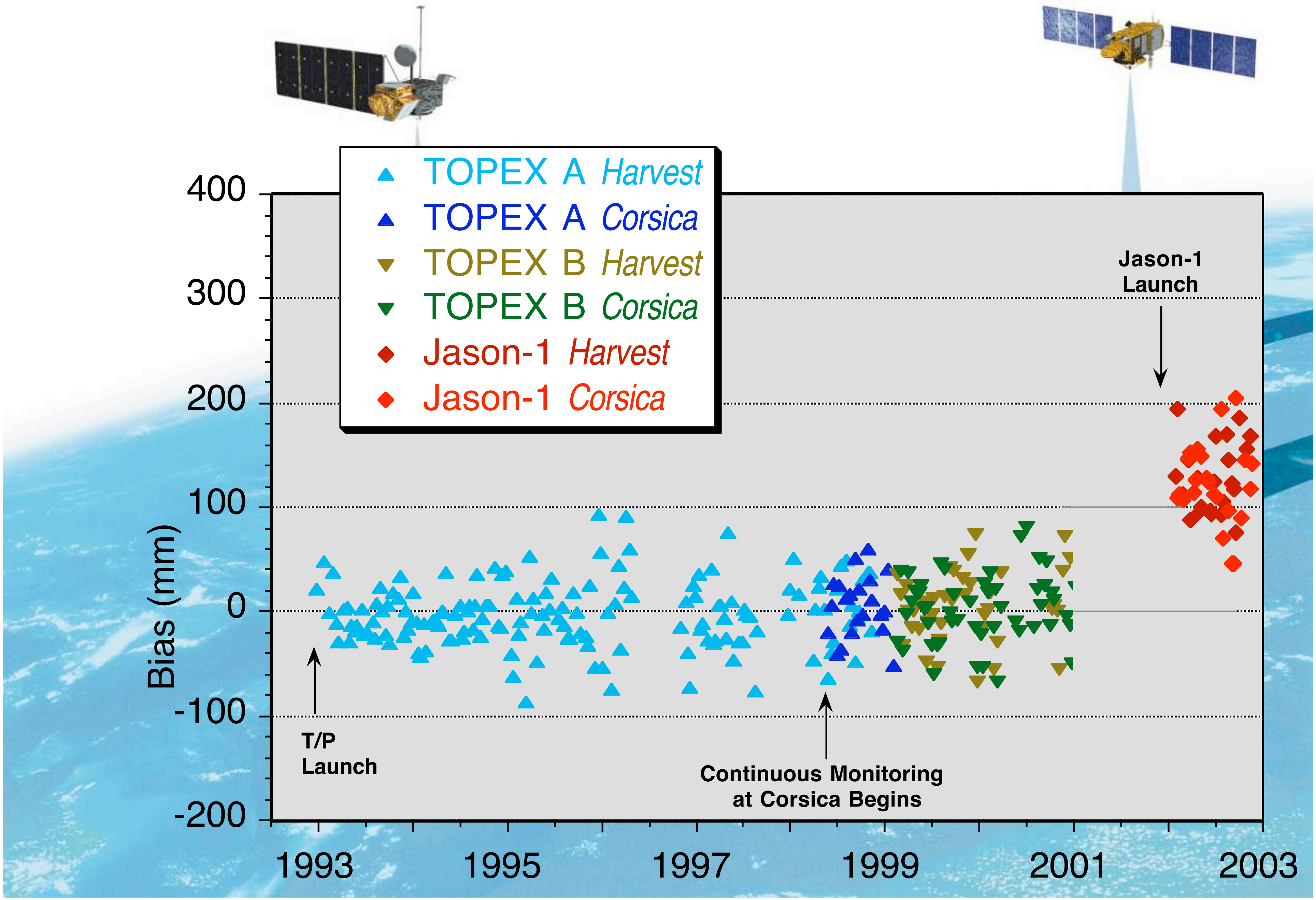
NORTH
Mean = 160.0 mm
σ = 12.0 mm

TROPICS
Mean = 154.1 mm
σ = 10.7 mm

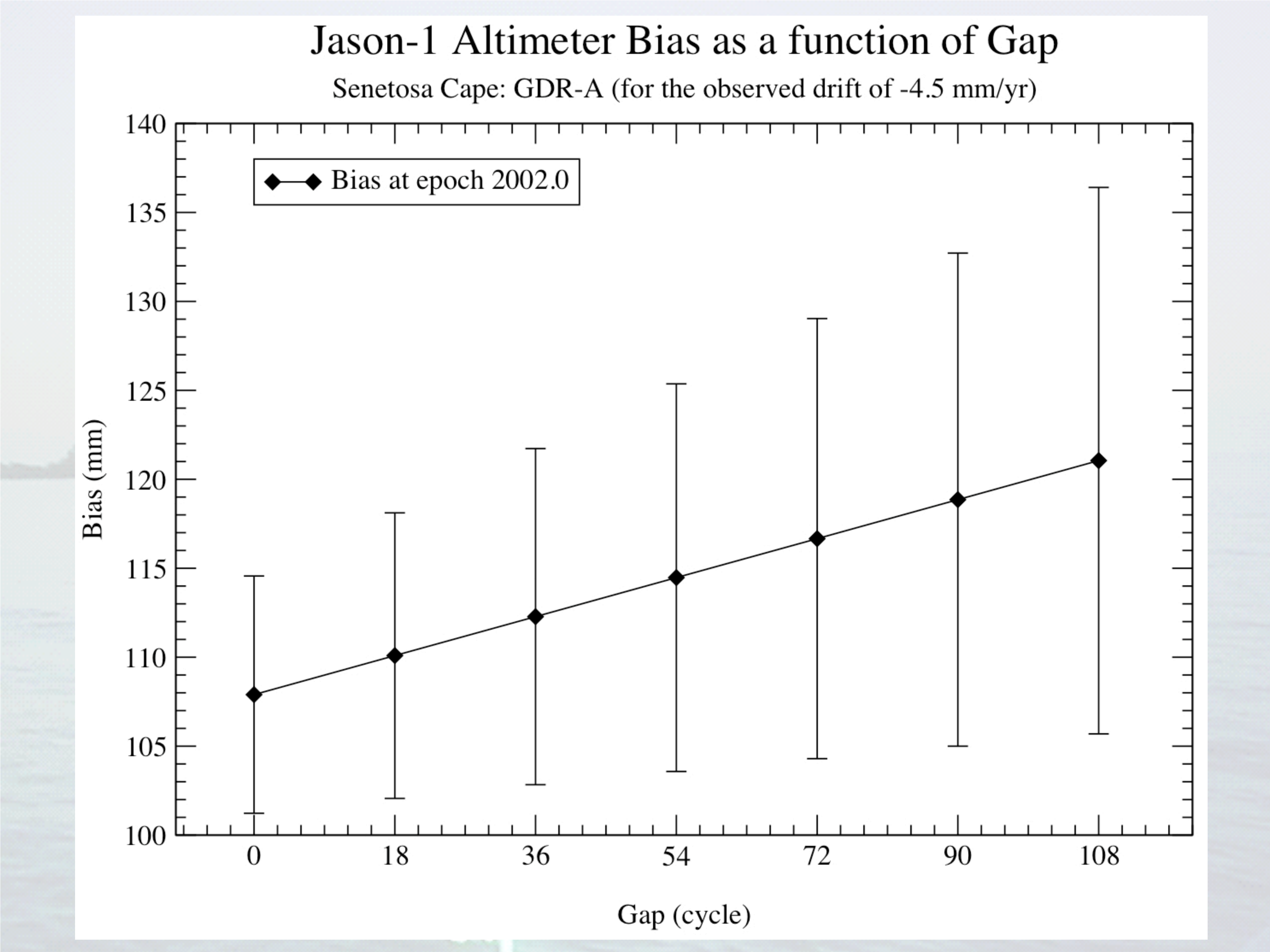
SOUTH
Mean = 164.6 mm
σ = 10.8 mm



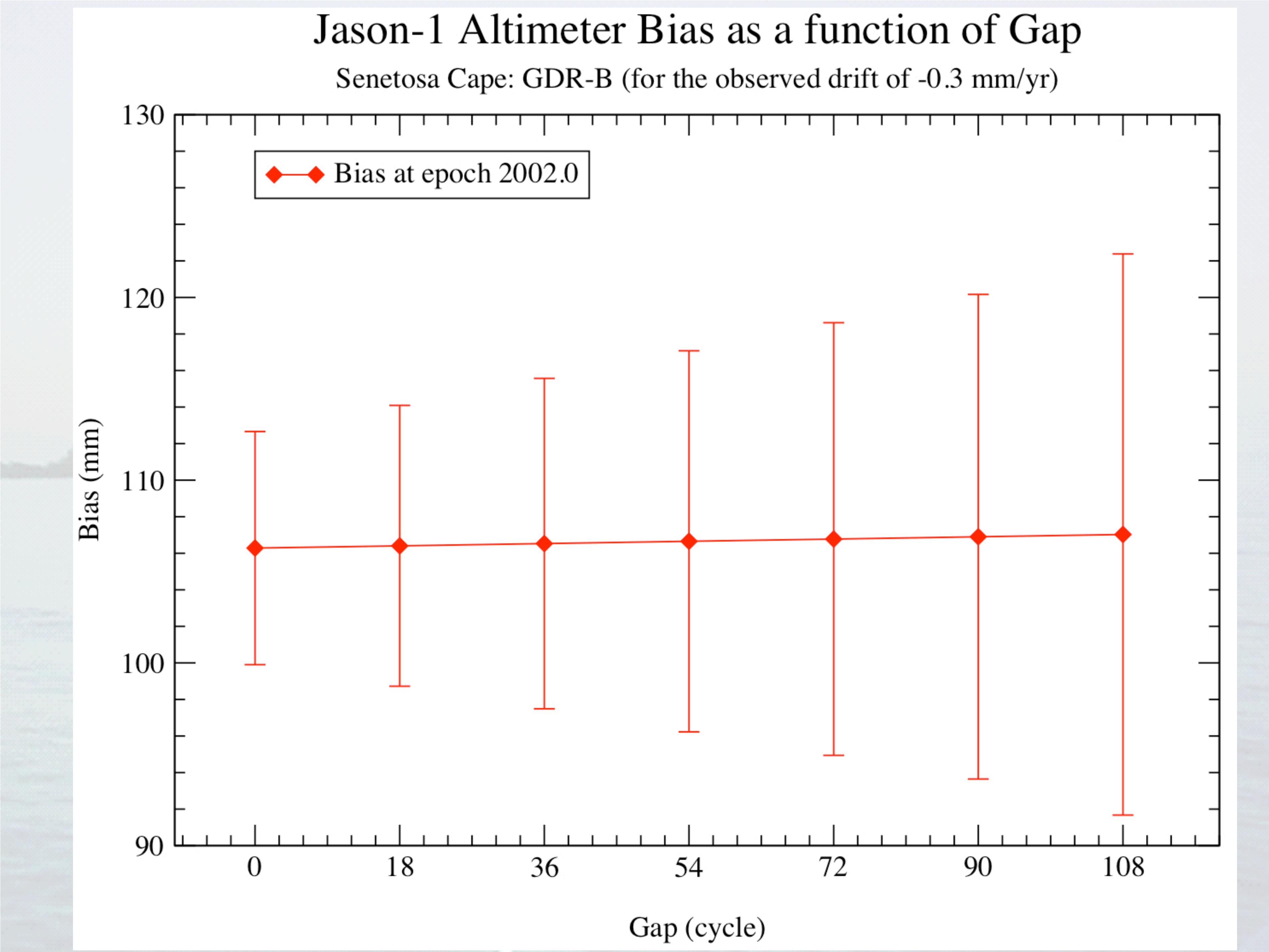
Linking different mission



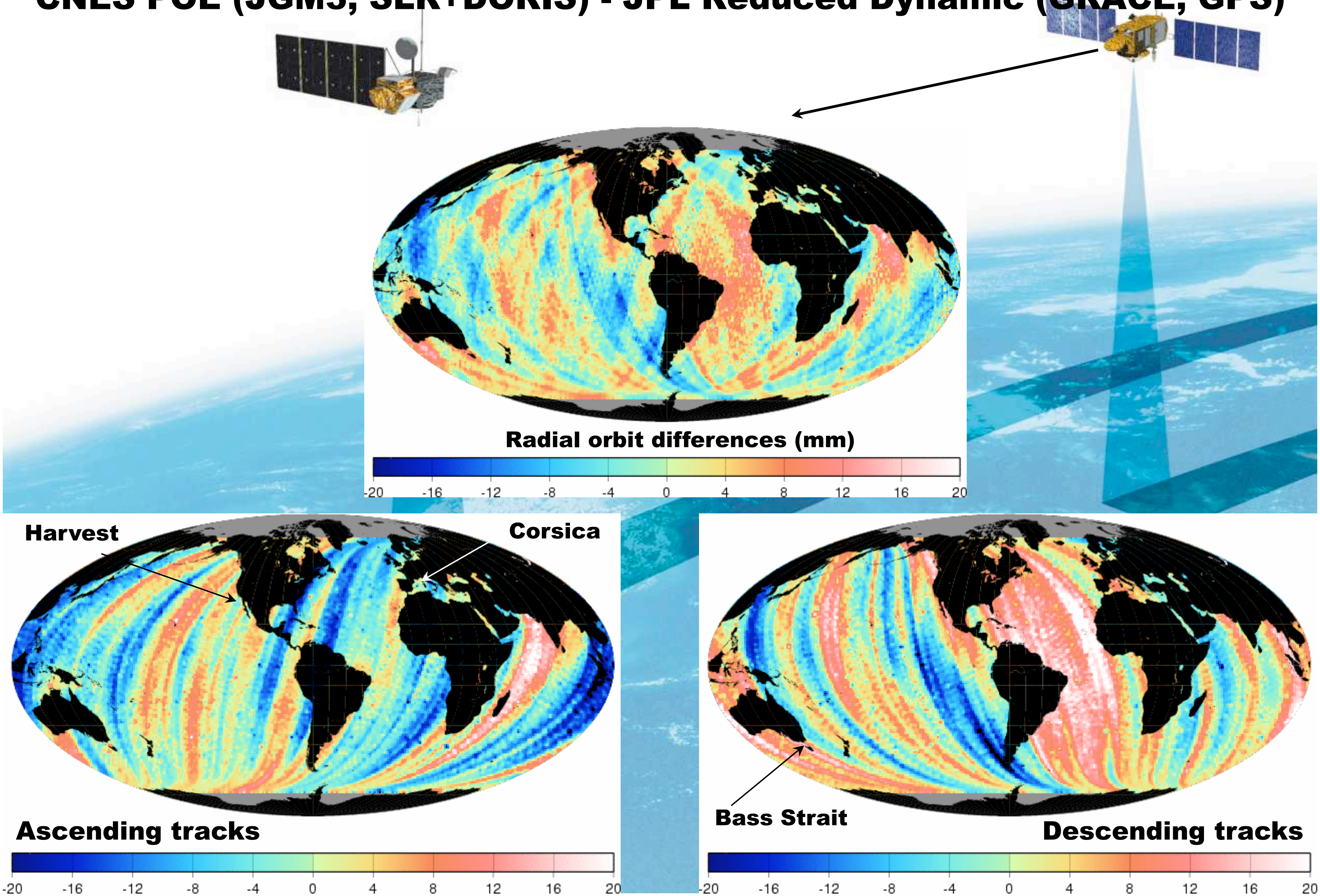
Bias as a function of gap

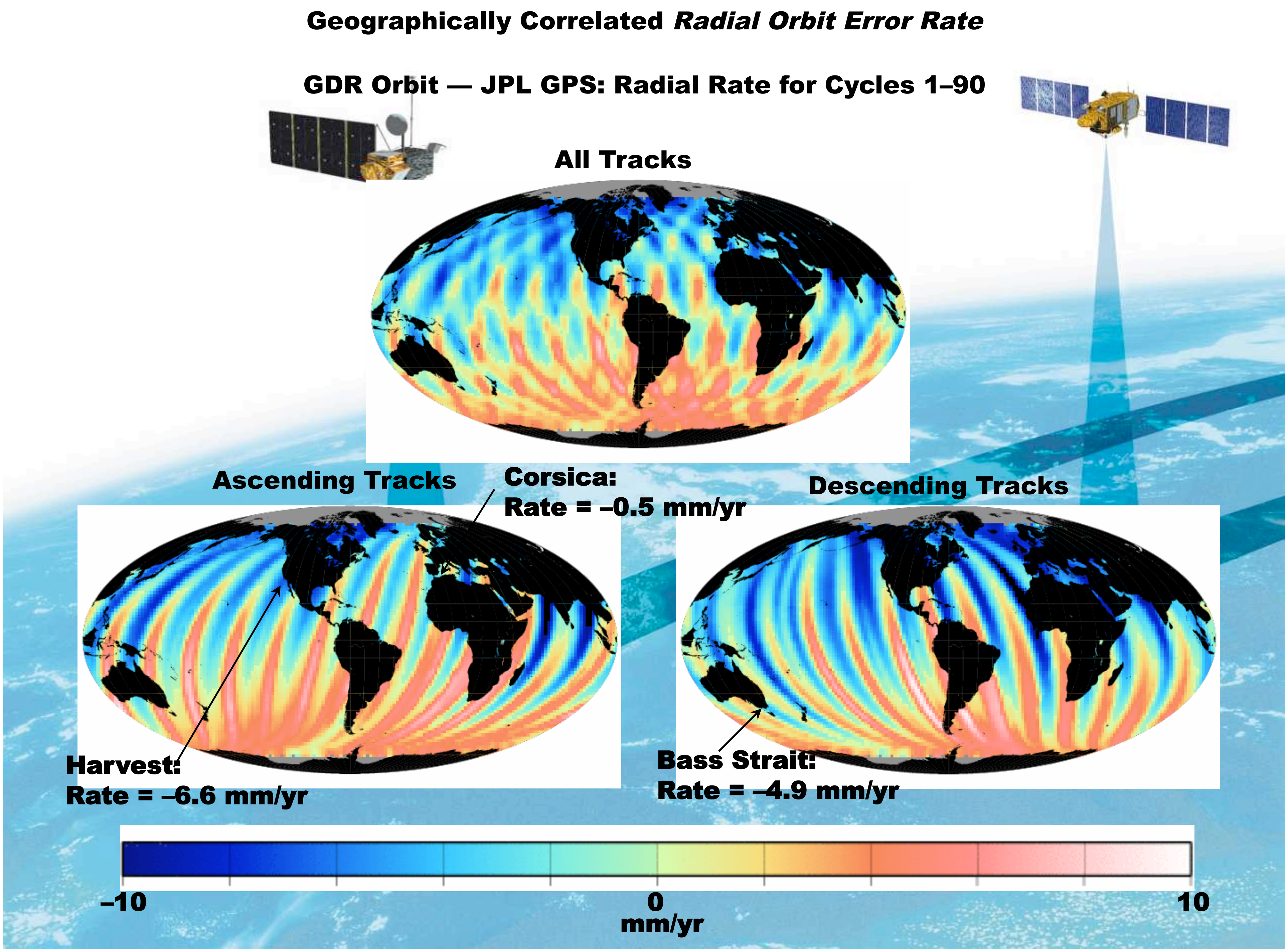


Bias as a function of gap gdrb

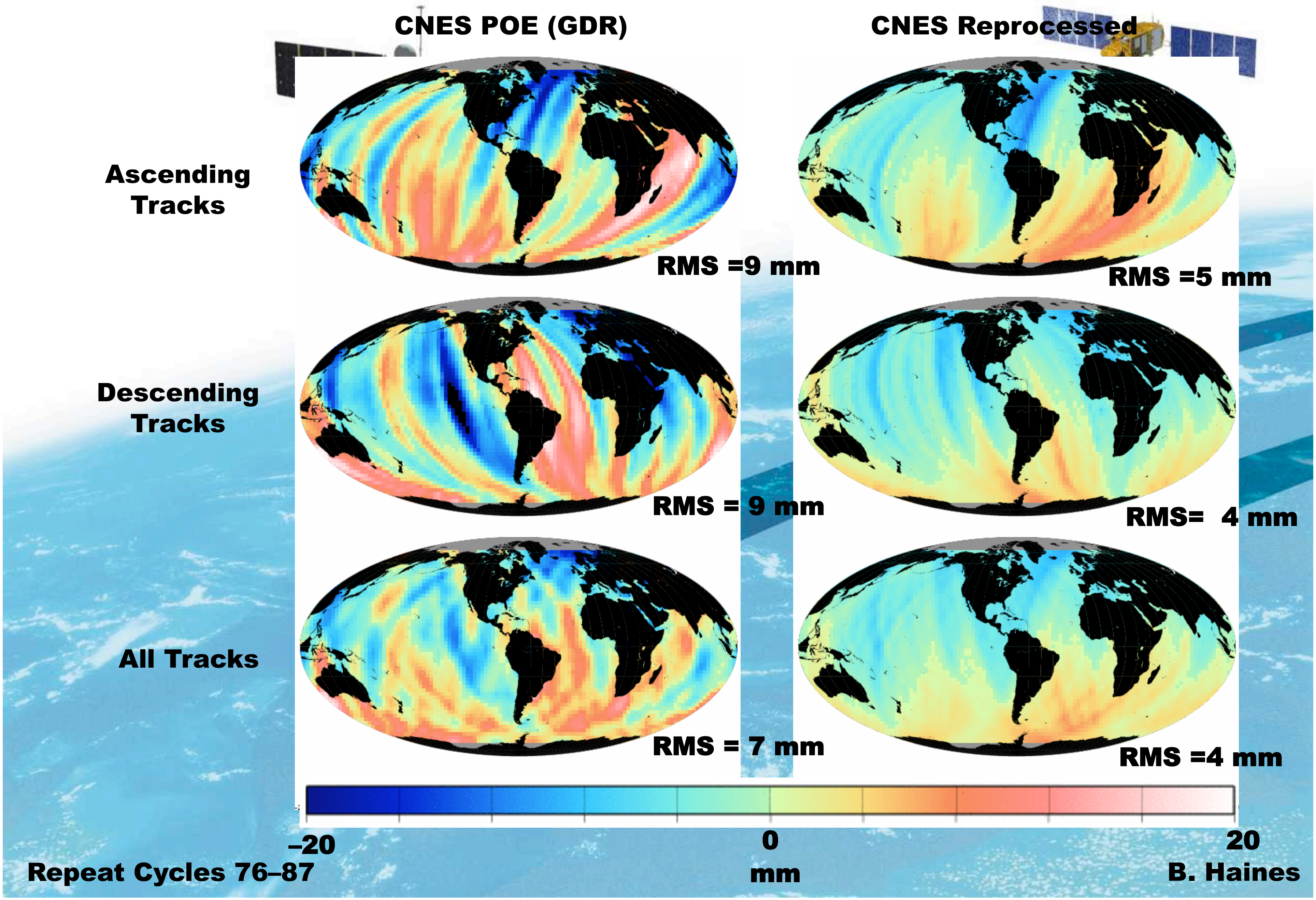


Jason-1:
CNES POE (JGM3, SLR+DORIS) - JPL Reduced Dynamic (GRACE, GPS)

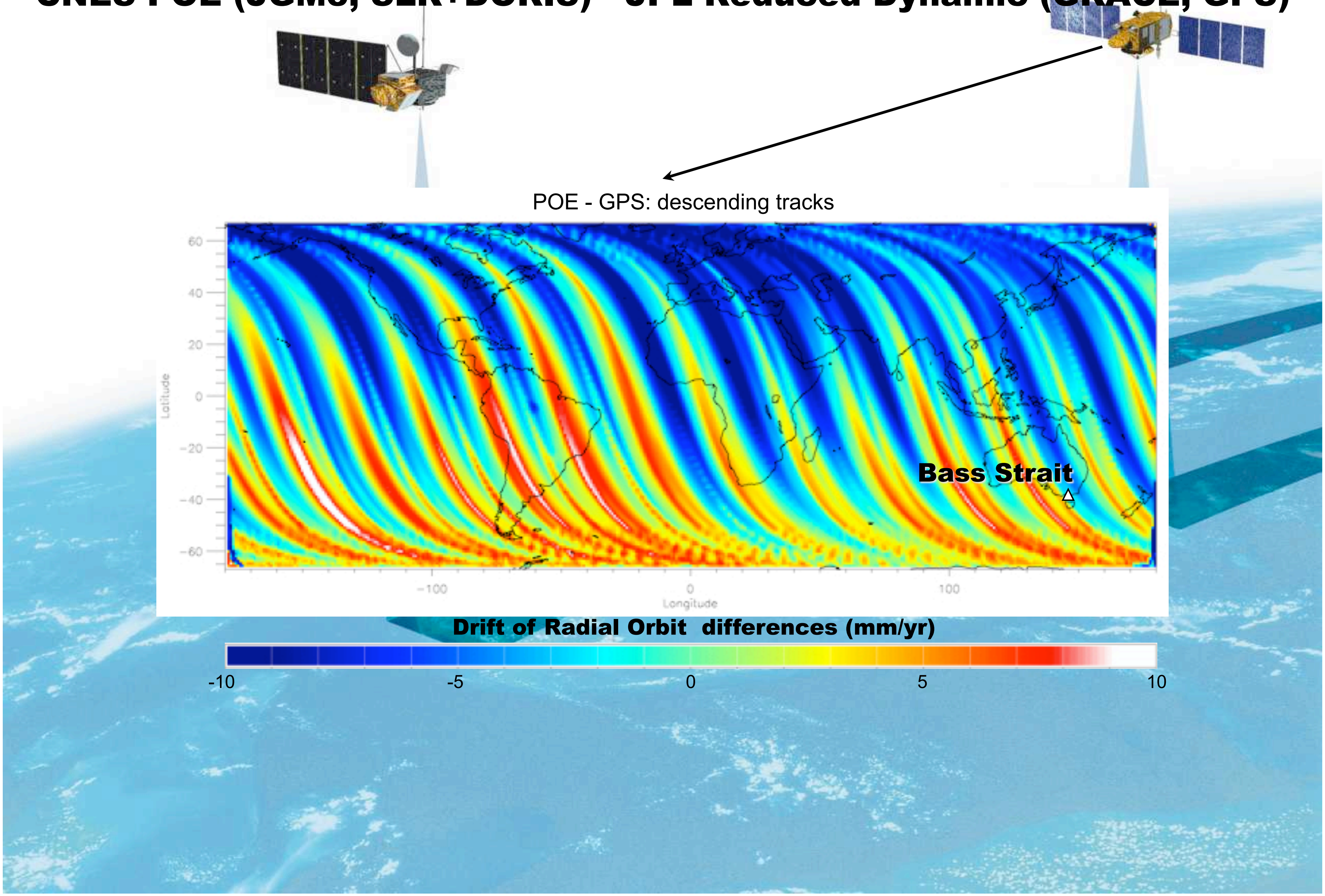



Geographically Correlated *Radial Orbit Error Rate*
GDR Orbit — JPL GPS: Radial Rate for Cycles 1–90
All Tracks
Ascending Tracks
Corsica:
Rate = –0.5 mm/yr
Descending Tracks
Harvest:
Rate = –6.6 mm/yr
Bass Strait:
Rate = –4.9 mm/yr
–10
0
10
mm/yr

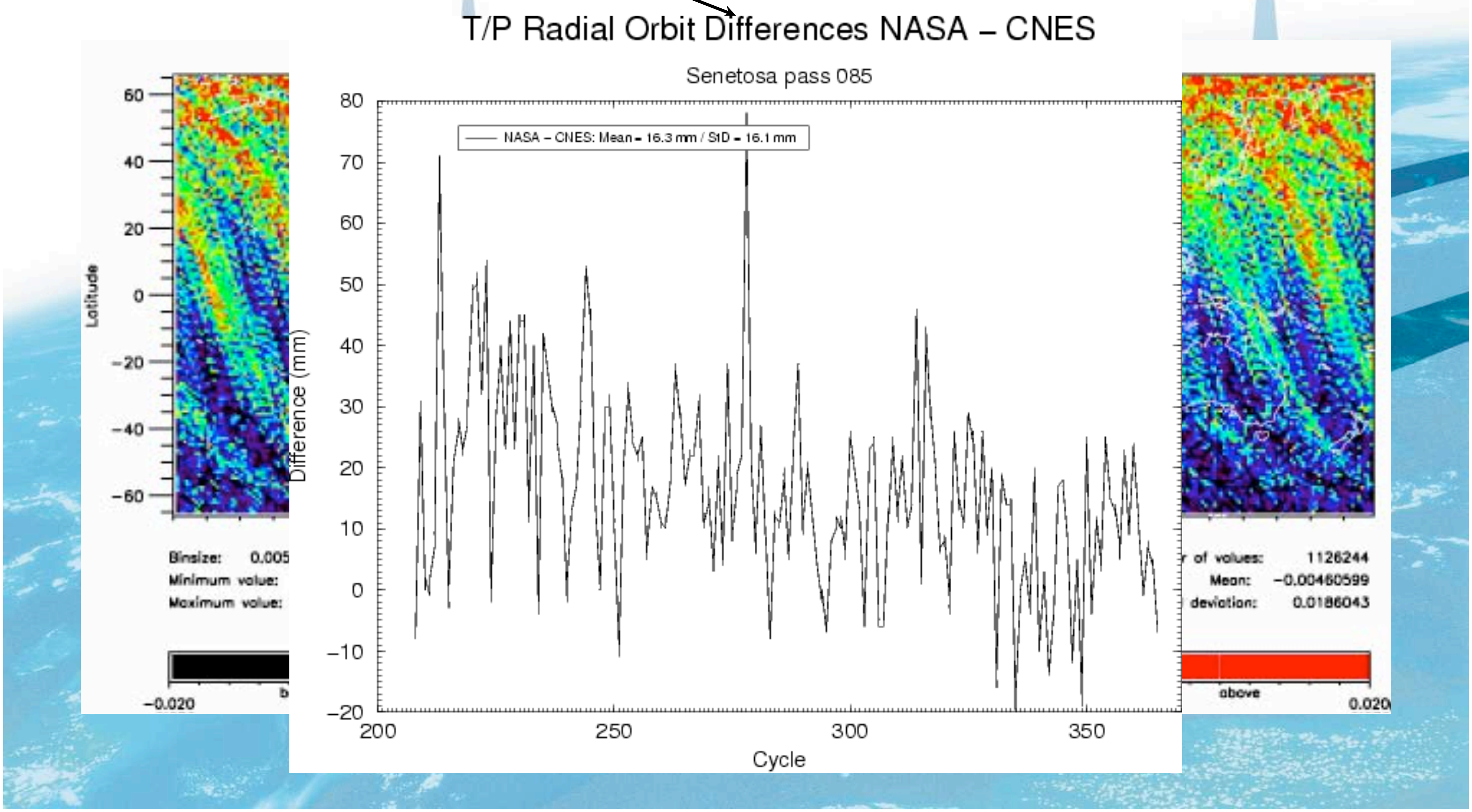
Geographically Orbit Errors Revealed by GPS Orbits



Jason-1:
CNES POE (JGM3, SLR+DORIS) - JPL Reduced Dynamic (GRACE, GPS)



TOPEX/Poseidon:
NASA - CNES POE



JMR - TMR During Formation Flying Phase

Jason-1 GDR: Cycles 1-21

T/P MDGR + TMR Drift Correction: Cycles 344-364