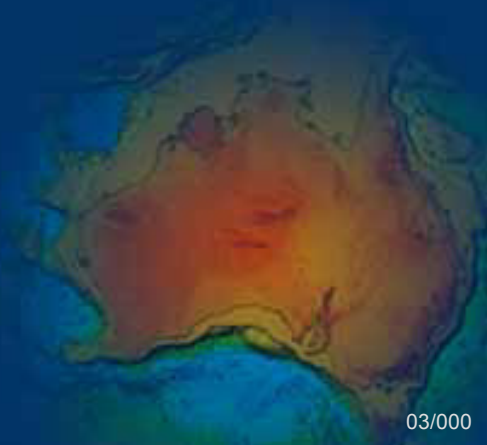**Australian Government**

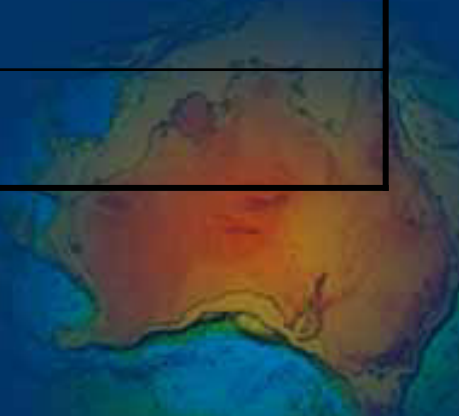**Geoscience Australia**

Status Report
DORIS Analysis

## Ramesh GOVIND and Frank Lemoine

Weekly arcs computed, combined and SINEX files produced

| Satellite	Start week of data	End week of data
SPOT-2	93-01-03	04-11-28
SPOT-4	98-05-03	04-12-26
SPOT-5	02-06-23	04-11-21
Topex	96-01-07	04-05-09
Envisat	02-06-16	04-12-12

Software/Modelling/Data Processing

- Geodyn0401, SOLVE, Write Sinex
  - **Modelling**
    - GGM01S gravity field
    - Time varying gravity applied for zonals up to degree 5, $C(2,1)$ and $S(2,1)$
    - Ocean Tides – GOT99
    - Ocean Loading – from GOT99
   - ITRF2000 apriori coordinates and velocity
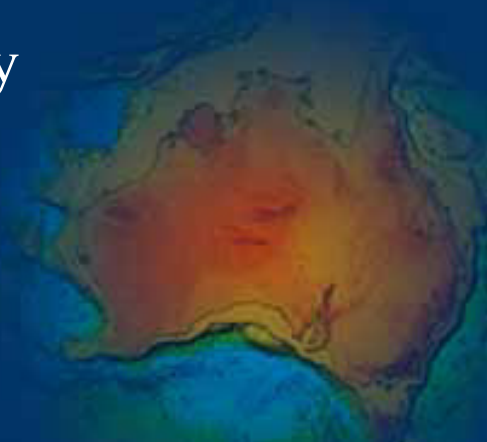
Software/Modelling/Data Processing

- **<u>Partials Generated for Each Satellite as follows:</u>**
  - **<u>Global Set:</u>**
    - GM, Semi-Major Axis, flattening
    - Gravity coefficients to degree and order 10
    - X-Pole, Y-Pole and A1-UT1
    - Tracking Station Coordinates
  - **<u>Arc Set:</u>**
    - State Vector
    - 8-hourly drag coefficient
    - General Acceleration (4)
      - Once/rev sine and cosine – along and cross track
    - Measurement biases (Doppler) pass-by-pass
    - Tropospheric Scale Bias – pass-by-pass
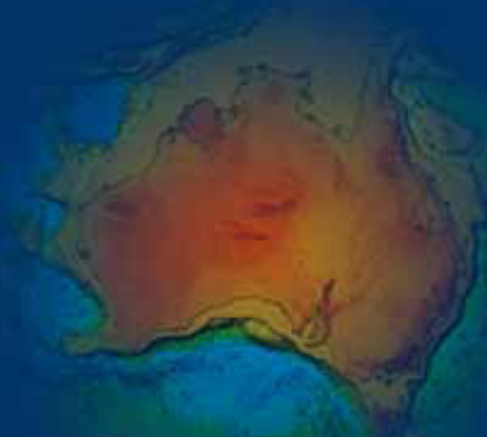
Software/Modelling/Data Processing

- **<u>Estimated Parameters at the Combination stage (all possible satellites):</u>**
  - Tracking Station Coordinates
  - X-Pole, Y-Pole and A1-ut1
  - Gravity Field Coefficients to degree and order 2
  - GM
  - Satellite state vector, General Acceleration, Drag
- **<u>Proposed Improvements for re-processing:</u>**
  - Update station set – Ries/Willis
  - Update Tide Models
  - Include Atmospheric Loading
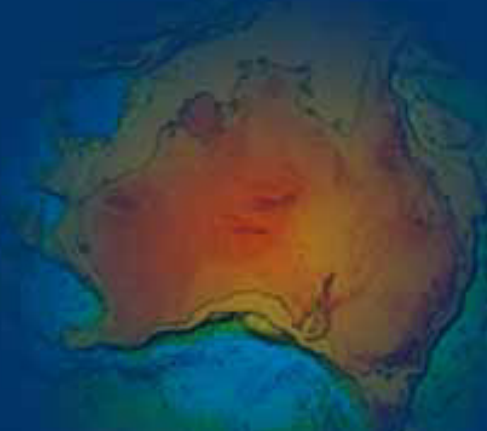
Lambert and Sorsdal Glaciers – Antarctica.

The DORIS Pilot Project data for the Lambert and Sorsdal Galciers in Antarctica were processed and the daily glacier velocities determined.

Lambert	SPOT-4 & SPOT-5	03-01-12	03-01-19
Sorsdal	SPOT-4 & SPOT-5	03-12-01	03-12-08
		04-01-02	04-01-23