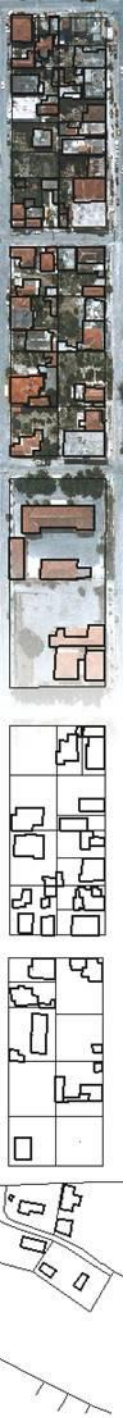

NATIONAL CADASTRE & MAPPING AGENCY S.A.

National Report of Greece

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Outline

1. **Monitoring of ionospheric activity**
2. **The 2014 North Aegean Sea earthquake**
   - **Permanent displacements**
   - **1 Hz data analysis**

1. Monitoring of ionospheric activity

Motivation

The ionospheric activity over Greece is continuously monitored as a part of the operation of HEPOS:

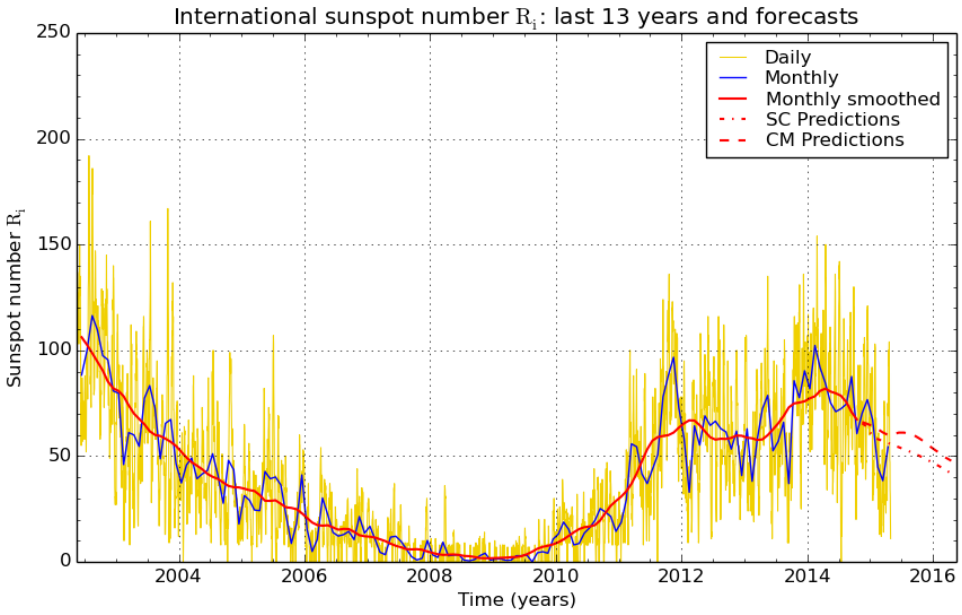
- **system supervision**
- **user support/information**

During 2011 and 2012, intense ionospheric activity seriously affected RTK applications in Greece, mainly in the Southern part of the country.

1. Monitoring of ionospheric activity

Ionospheric activity around maximum of SC 24

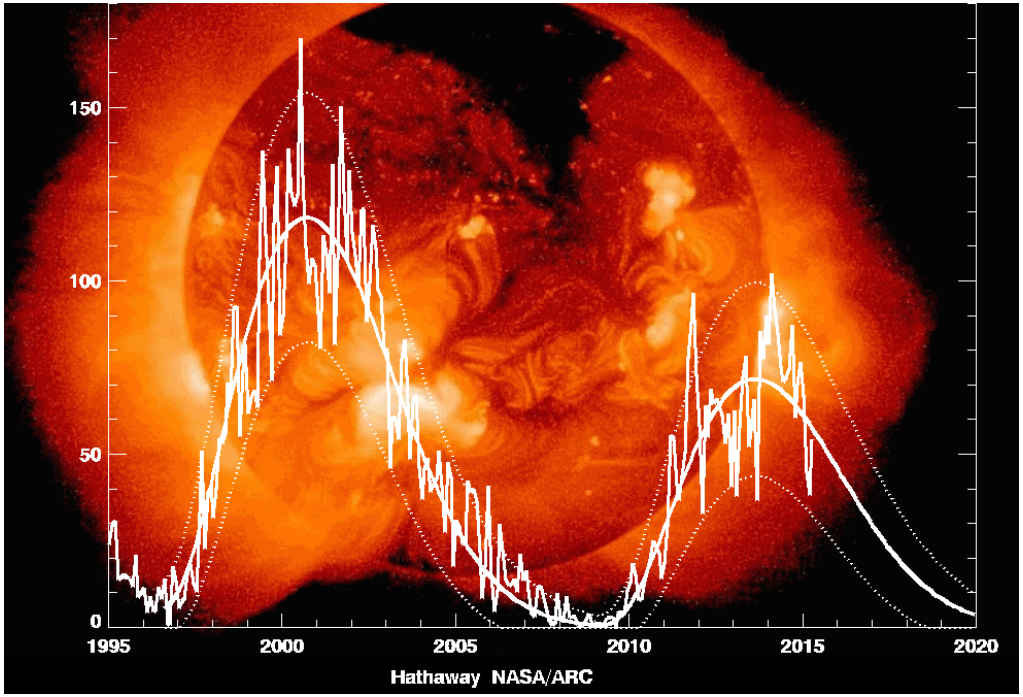
- The maximum of the 24th Solar Cycle was (initially) expected in 2013.
- However, the monitored ionospheric activity in 2013 was intense indeed, but at levels comparable to that of 2011 and 2012.
- The high activity in late 2011 was clearly exceeded only in 2014.
- The sunspot number reached in April 2014 will probably be the maximum of SC 24.
- Since then the Sunspot Number is decreasing.



1. Monitoring of ionospheric activity

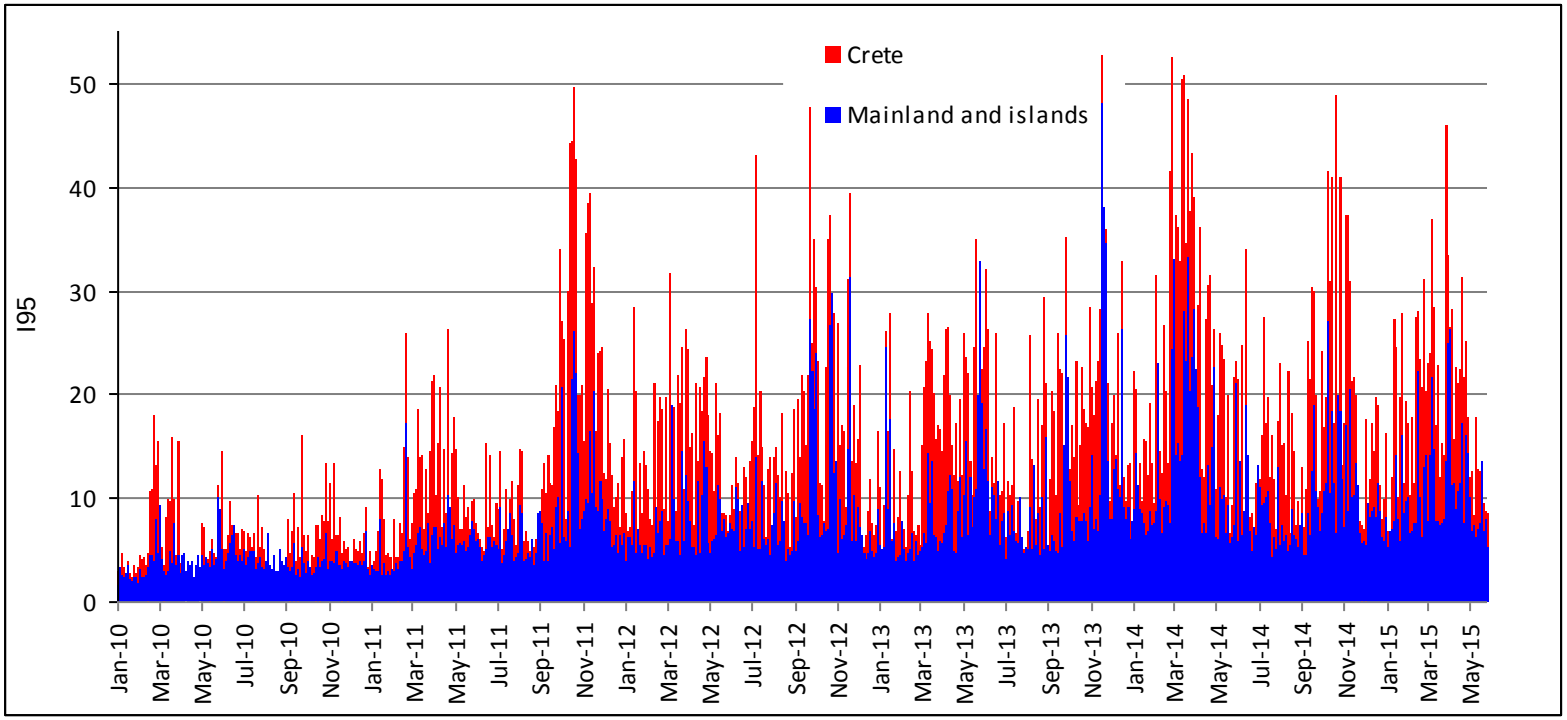
Solar Cycle 24

- **the smallest sunspot cycle since Cycle 14 (1906).**
- **double-peaked.**
- **the first in which the second peak in sunspot number was larger than the first.** *(http://solarscience.msfc.nasa.gov/predict.shtml)*



1. Monitoring of ionospheric activity

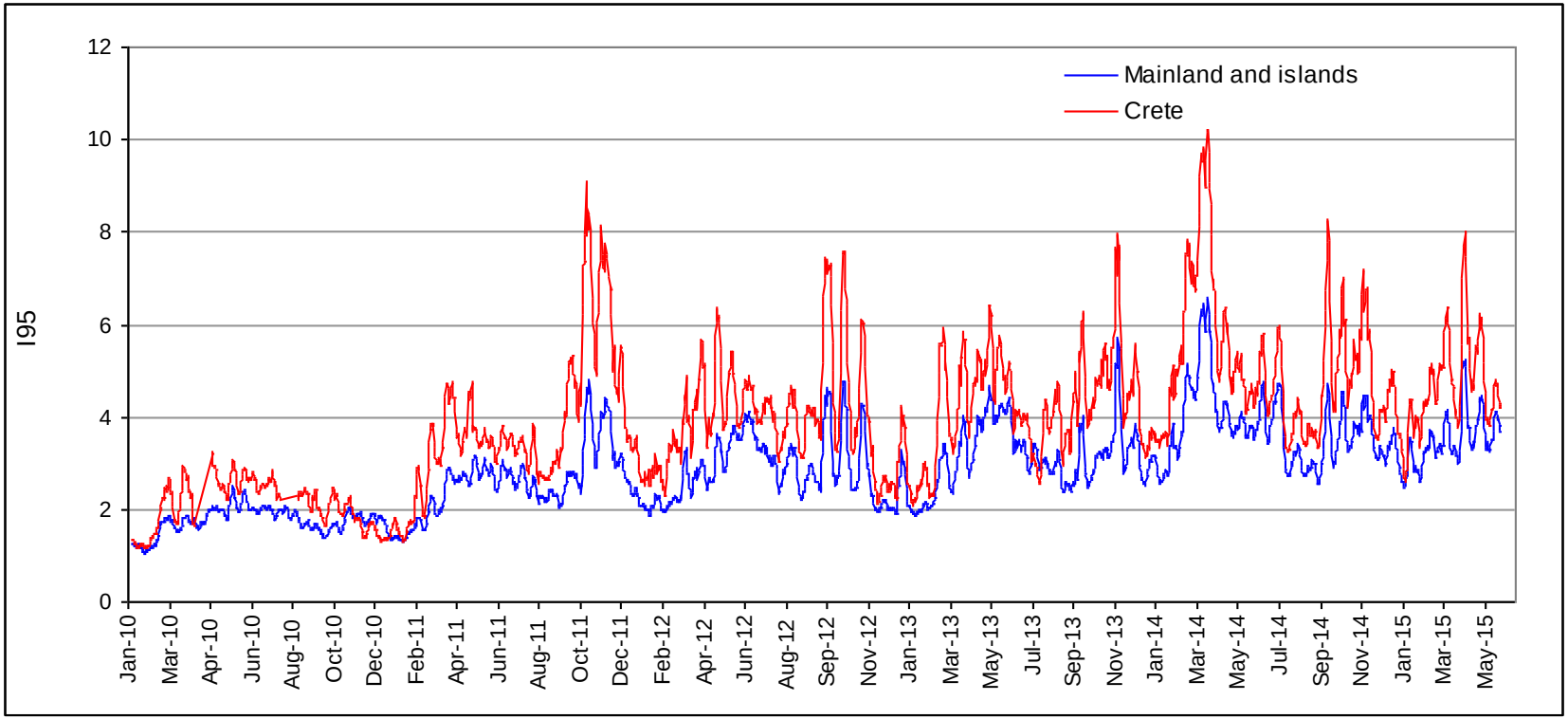
HEPOS I95 index
Daily maximum



1. Monitoring of ionospheric activity

HEPOS I95 index
Daily mean

Mean of the 24 hourly values, smoothed with moving average filter (span: 7 days)



2. The 2014 North Aegean Sea earthquake

The 2014 North Aegean Sea EQ

- **Day: May 24, 2014**
- **Mw: 6.9**
- **Depth: 28 Km**

- **Stroke along the North Aegean Trough (NAT), near Samothrace Island.**

- **Low accelerations despite its magnitude**

- **Significant permanent displacements**

2. The 2014 North Aegean Sea earthquake

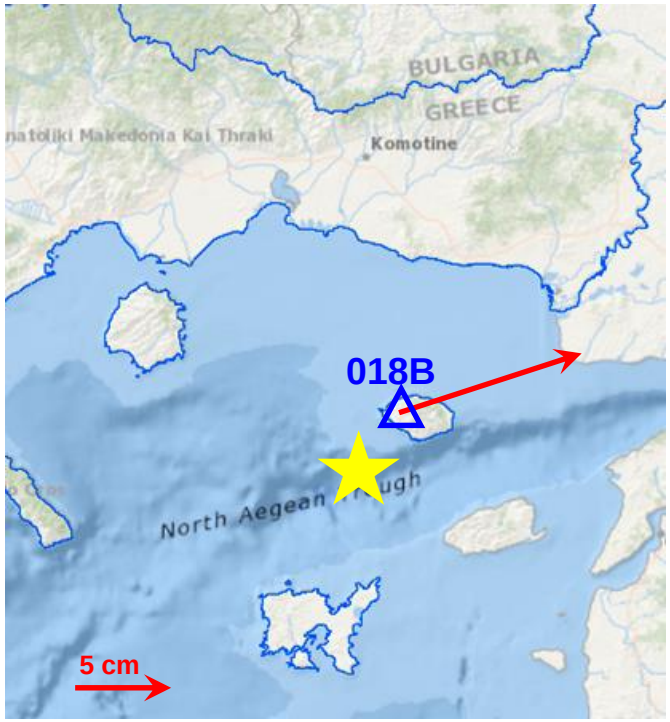
Data processing

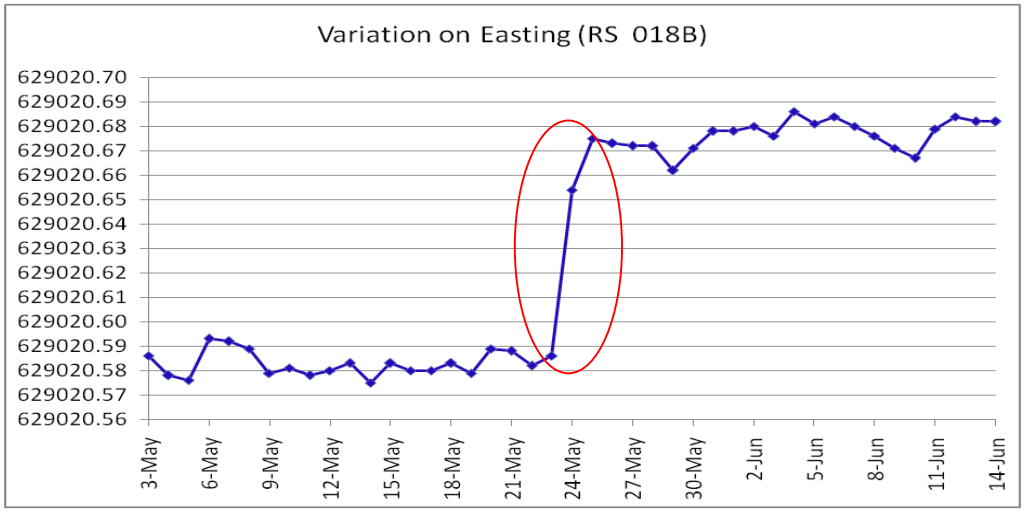
PPP (Precise Point Positioning) in kinematic mode using:

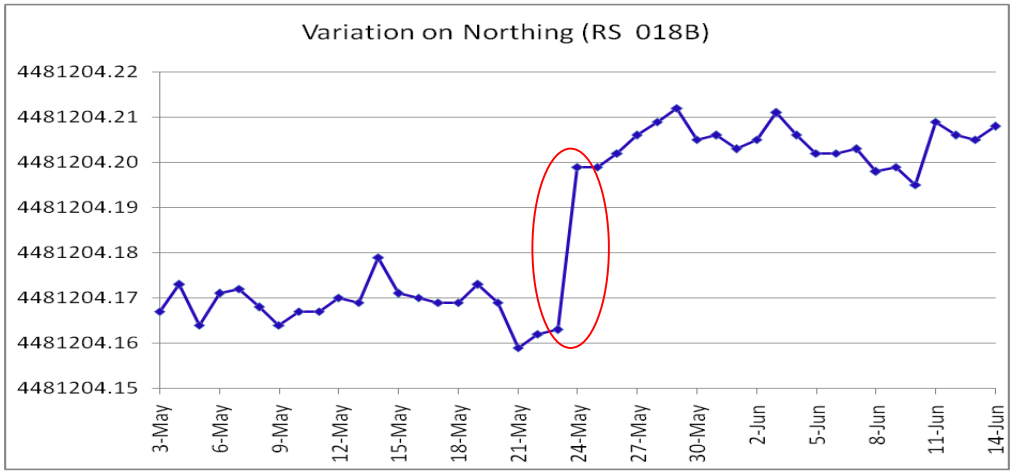
- **Final Precise orbits (CODE)**
- **Final GPS clock information (CODE)**
- **GrafNav ver. 8.40**
- **Combination of forward & backward Kalman filter solutions**
- **Processing interval: 24 hours (15 sec data), 2 hours (1Hz data)**

2. The 2014 North Aegean Sea earthquake

Permanent displacements

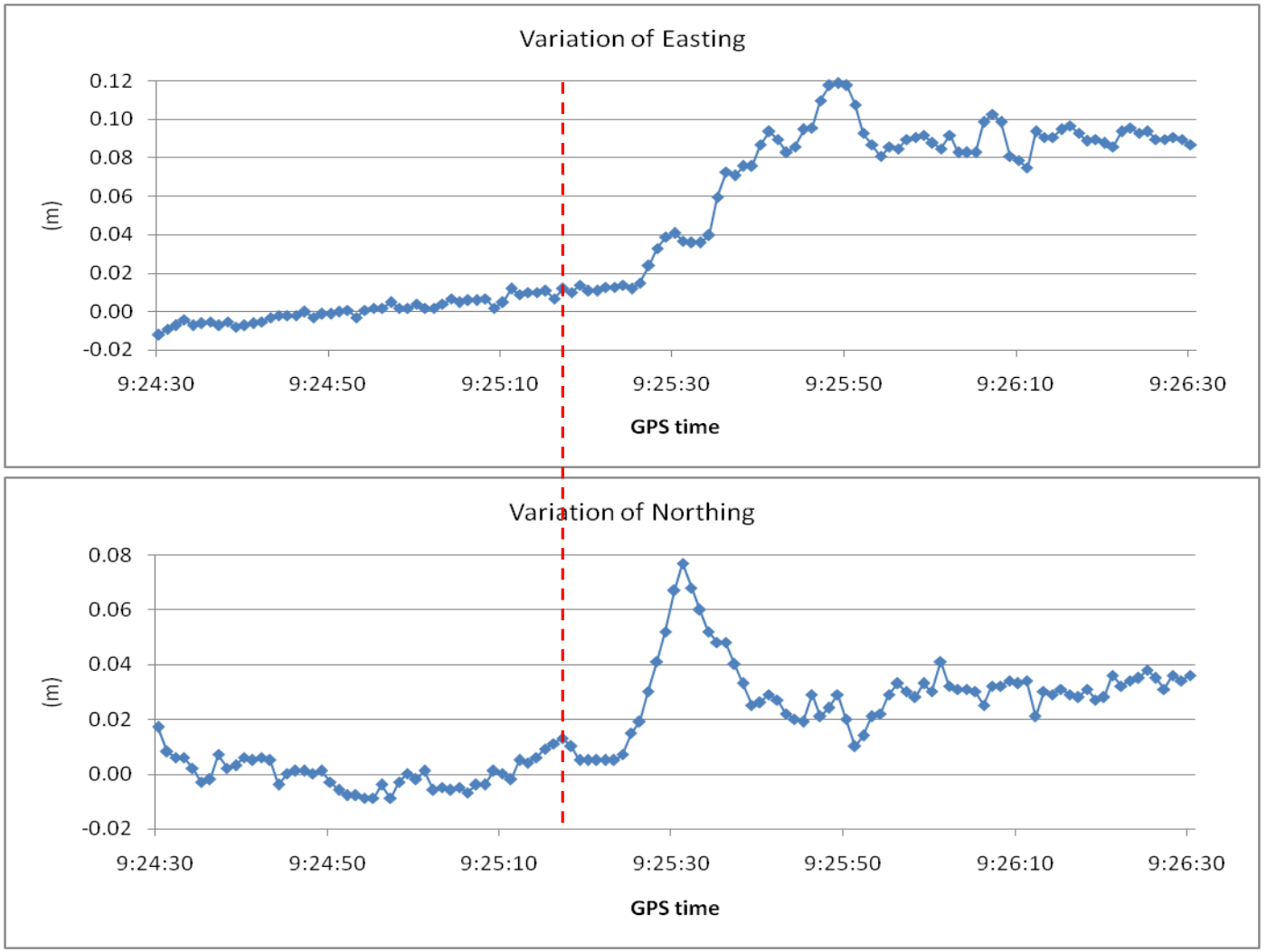






2. The 2014 North Aegean Sea earthquake

1 Hz data analysis



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