



Ευρωπαϊκή
Επιτροπή



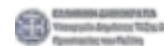
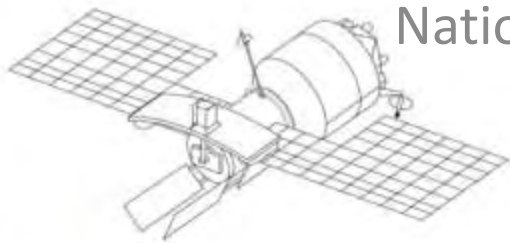
Greece's Space Capabilities

Dr Haris KONTOES

Research Director of NOA

National Delegate of H2020 SPACE Program
Committee

Part II



ΚΕΝΤΡΟ ΜΕΛΕΤΩΝ ΑΣΦΑΛΕΙΑΣ
CENTER FOR SECURITY STUDIES



On-line Fire Services dissemination through NOA's dedicated web interface

(http://ocean.space.noa.gr/seviri/fend_new/index.php)

The screenshot displays the SEVIRI Monitor web interface. The main map shows fire hotspots in Greece, with labels for 'Northern Sporades' and 'New Evros'. A sidebar on the left contains logos for SWoFS, smee, strabon, and EUMETSAT. A 'Status Info' panel on the right shows: Mode: Archive, Beginning Time: 2012-08-21T21:00:00 GMT, End Time: 2012-08-21T21:00:00 GMT, Total #HotSpots: 2361, Latest #HotSpots: [blank].

The 'Aggregated Query Data' table is as follows:

ID	RANK	Municipality	Duration	Ignition	End
0	1910	ΔΗΜΟΣ ΚΥΜΗΣ-ΑΛΒΕΡΙΟΥ	27.25	2012-08-24T23:10:00	2012-08-26T02:20:00
2	1910	ΔΗΜΟΣ ΚΥΜΗΣ-ΑΛΒΕΡΙΟΥ	26.17	2012-08-25T01:45:00	2012-08-26T03:50:00
4	1910	ΔΗΜΟΣ ΚΥΜΗΣ-ΑΛΒΕΡΙΟΥ	17.83	2012-08-25T10:15:00	2012-08-26T04:00:00
5	1910	ΔΗΜΟΣ ΚΥΜΗΣ-ΑΛΒΕΡΙΟΥ	17.75	2012-08-25T10:15:00	2012-08-26T03:55:00
6	1910	ΔΗΜΟΣ ΚΥΜΗΣ-ΑΛΒΕΡΙΟΥ	11.83	2012-08-25T10:10:00	2012-08-26T21:55:00
10	1910	ΔΗΜΟΣ ΚΥΜΗΣ-ΑΛΒΕΡΙΟΥ	11.83	2012-08-25T10:10:00	2012-08-26T21:55:00
12	1910	ΔΗΜΟΣ ΚΥΜΗΣ-ΑΛΒΕΡΙΟΥ	10	2012-08-25T10:55:00	2012-08-26T10:50:00
13	1910	ΔΗΜΟΣ ΚΥΜΗΣ-ΑΛΒΕΡΙΟΥ	16.33	2012-08-25T10:20:00	2012-08-26T02:35:00
14	1910	ΔΗΜΟΣ ΚΥΜΗΣ-ΑΛΒΕΡΙΟΥ	10.67	2012-08-25T12:40:00	2012-08-26T23:15:00

The interface also includes a 'Fire Monitoring Service based on MSG SEVIRI' banner, a 'Realtime' / 'Archive' toggle, a 'Year & Month of Reference' selector (set to 2012), and a 'Fire Situation' map. A legend for 'All Detected Hotspots End Time (Days (Hours))' is visible, along with filters for 'Geotype: Population (Population)', 'Geotype: Mountain (Height (m))', and 'Geotype: Island (Area (km²))'. The bottom status bar shows the NOA implementation team and contact information.

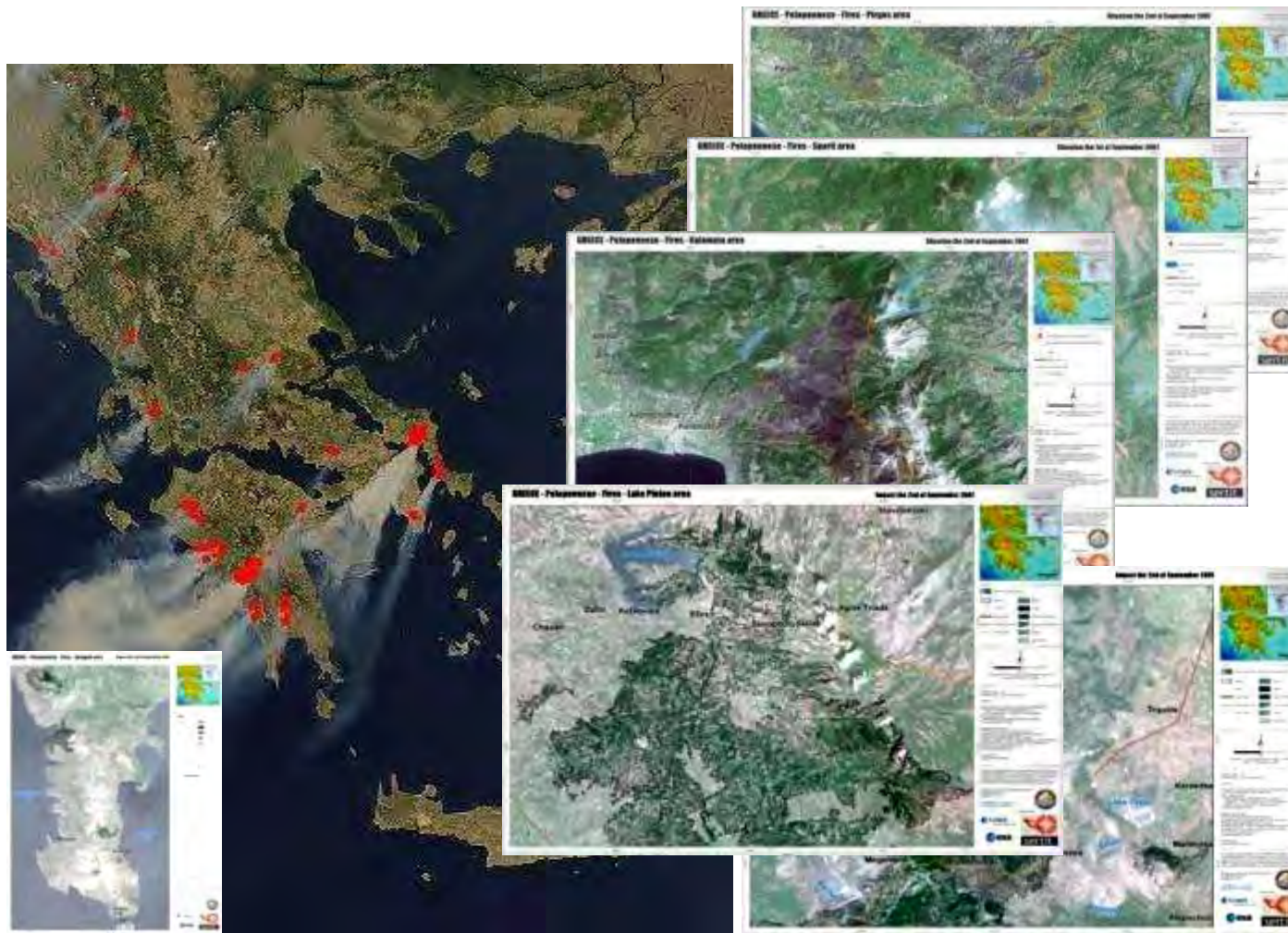
Regional Real Time Fire Monitoring - NOA's MSG SEVIRI Station



SEVIRI MIR 070823_1030 UTC

	POTENTIAL FIRE
	CONFIRMED FIRE

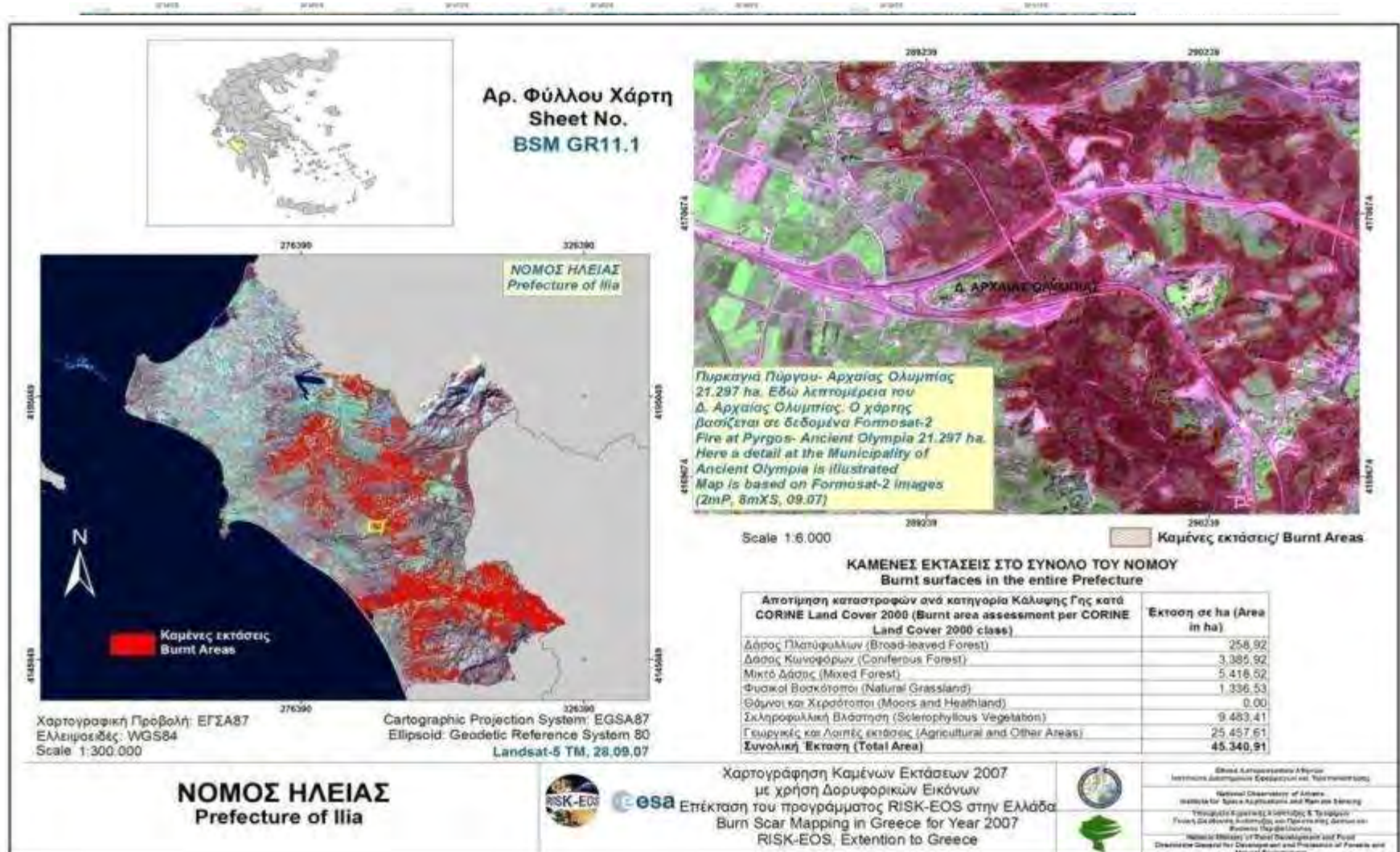
Rapid Fire Mapping Activation in Greece – Peloponnesus 2007



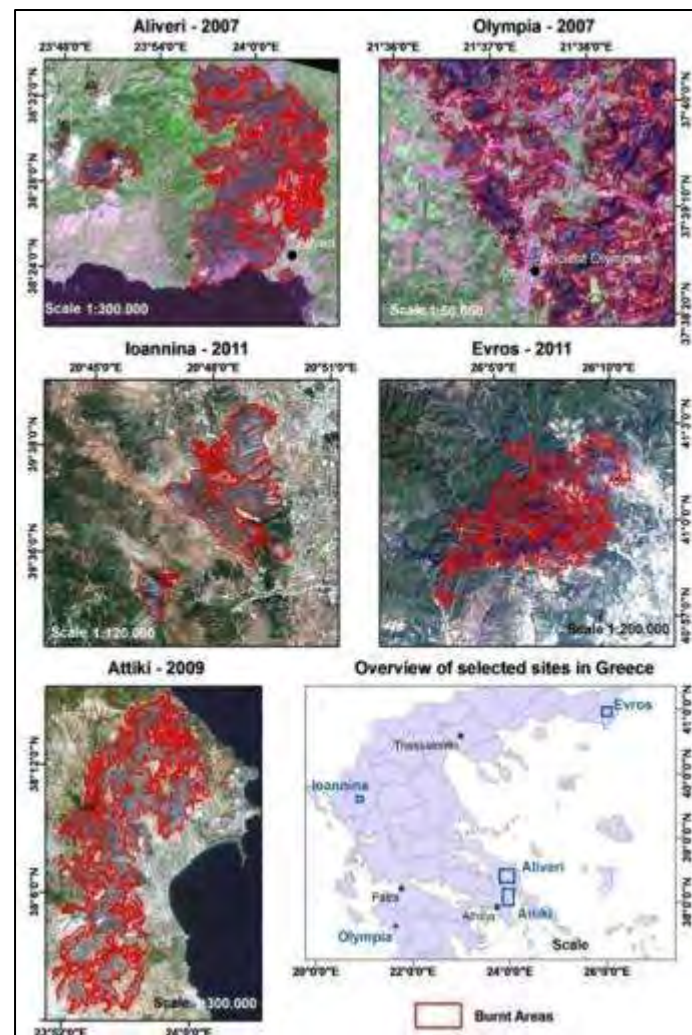
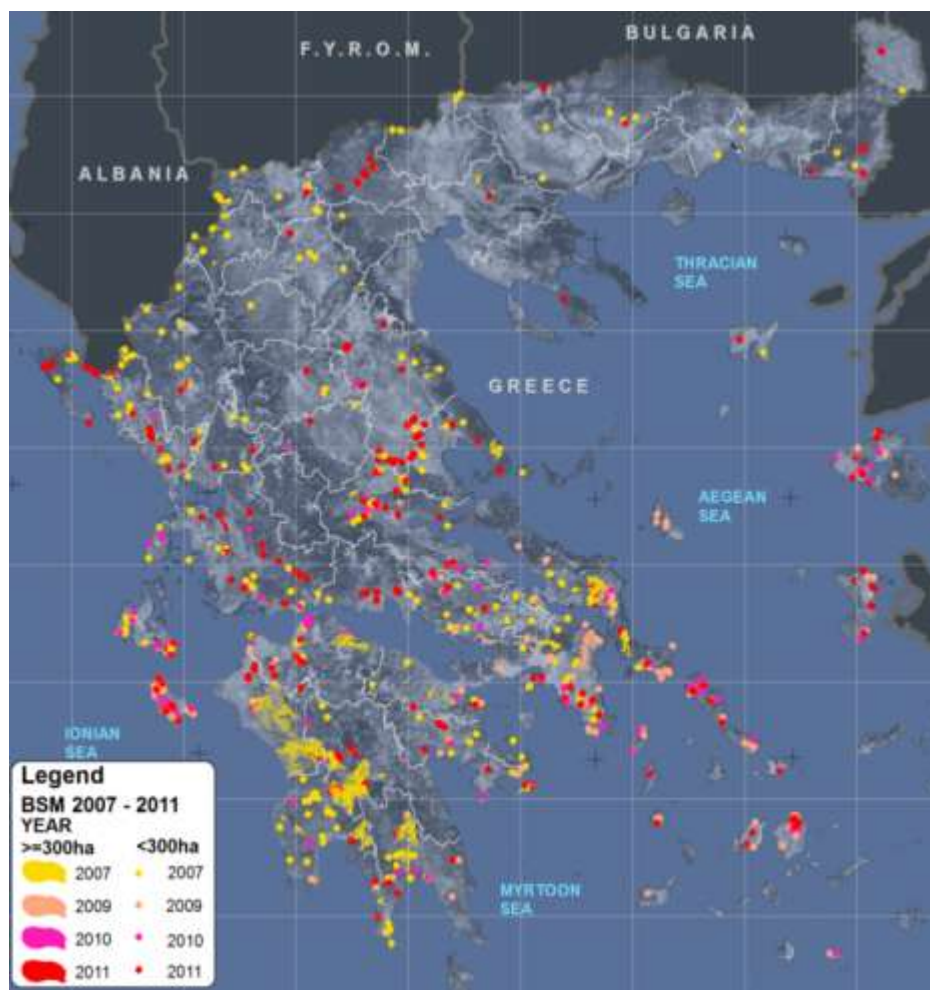
**INTERNATIONAL
CHARTER
OF MAJOR
DISASTERS
IS
ACTIVATED**



Burnt Area Mapping - Emergency Support Immediate Recovery Actions

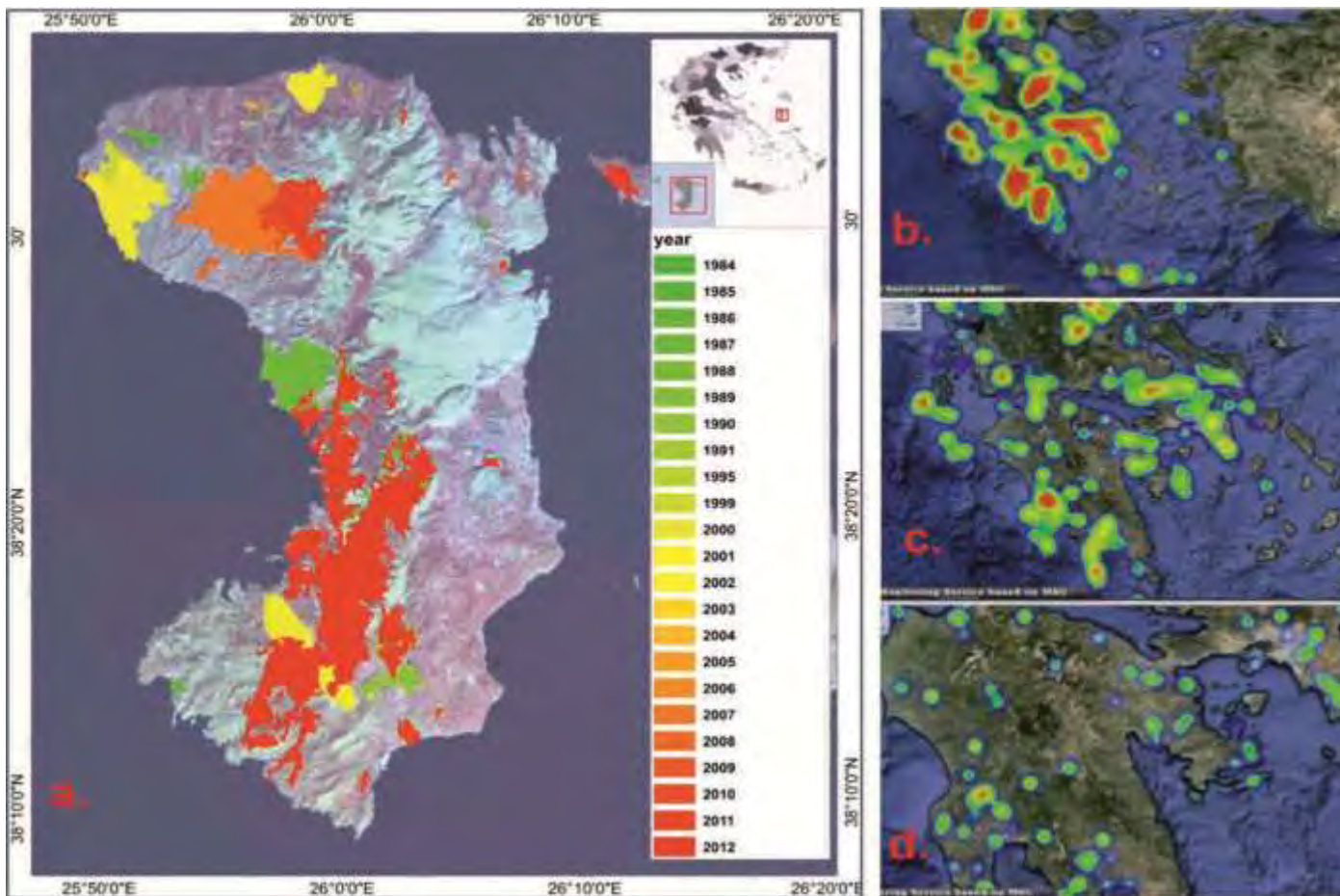


Seasonal Burn Scar Mapping & Damage Assessments – Recovery Phase



Diachronic Burn Scar Mapping & Damage Assessments at HR

On-line dissemination through NOA's dedicated web interface
(http://ocean.space.noa.gr/diachronic_bsm/index.php)



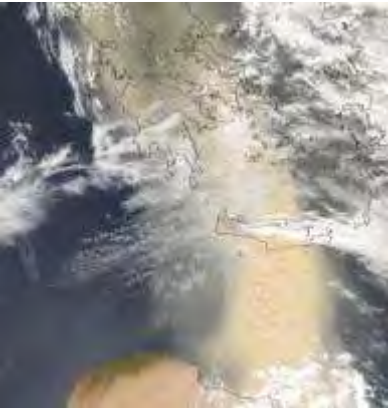
Smoke and Toxic Emissions, Volcanic ash and Saharan Dust dispersion over the sensitive urban ecosystems

Examples of systematic atmospheric hazards over Greece

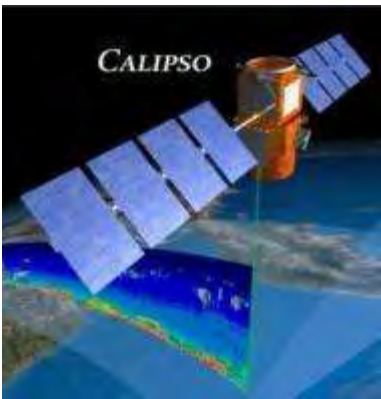
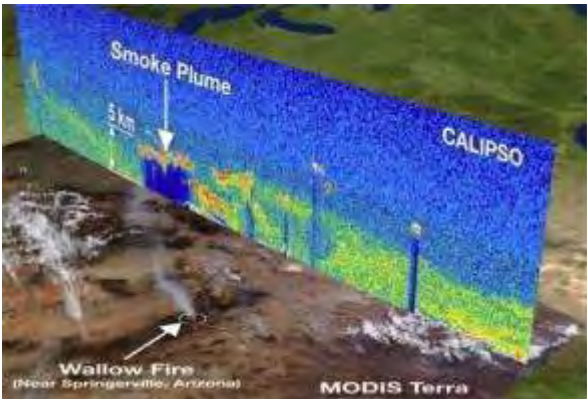
Fire & Volcanic
Smoke/Ash



Saharan Dust

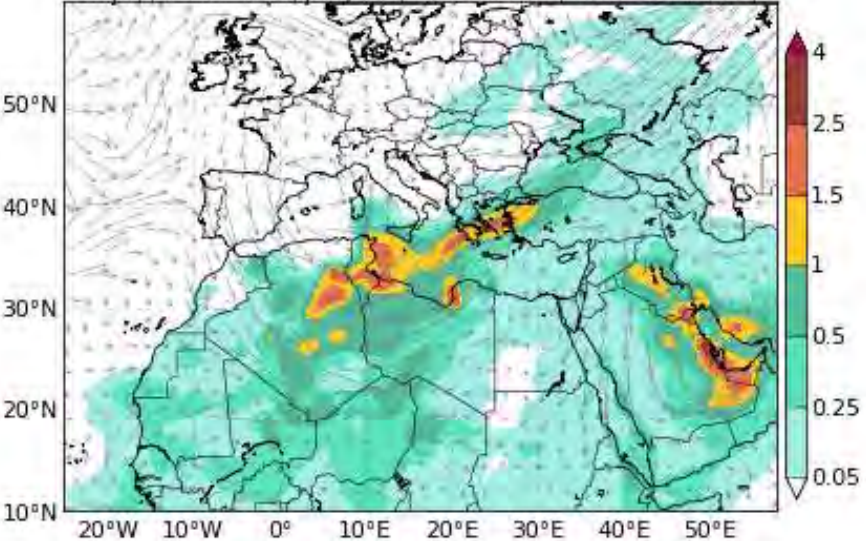


Modelling Smoke and Toxic Emissions, Volcanic ash and Dust dispersion over the sensitive urban ecosystems

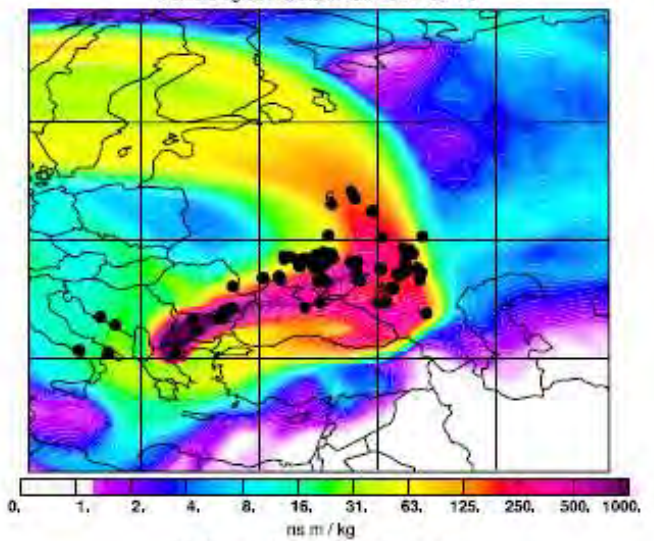


BSC-DREAM8b v2.0 Dust Load (g/m^2) and 3000m Wind
00h forecast for 12UTC 06 Apr 2013

<http://www.bsc.es/projects/earthscience/BSC-DREAM/>



Column-integrated emission sensitivity in global domain for Thessaloniki_010820,
Start time of sampling 20010820.180000 End time of sampling 20010820.180000
Upper release height 3000 m Lower release height 2500 m
Meteorological data used are from ECMWF



Global 3D climatology of aerosols and clouds

Home Climatology Selected Scenes

LIVAS Product
Aerosol Extinction @532nm Per Type for cell with centroid: Lat= 37.5°, Lon= 14.5°

General Statistics:

Surface Elevation		
Mean	5.43104	Min 0
Max	1.503	
Number of observations:	100	
Number of profiles examined:	1077	

Aerosol Statistics:

Samples averaged (after filtering):

Total	107700	Aerosol	50004	Clean	118200
		SD	60		

Aerosol subtype occurrence:

CM	D	PC	CC	PD	S
2.0001	0.2844	4.2027	2.5000	21.5726	19.4361

Aerosol Optical Depth at 632 nm:

Mean	0.17921	Median	0.00102	SDDev	0.44577
------	---------	--------	---------	-------	---------

Product Selector

Category	Product	Wavelength	Partial Products
Aerosol	Extinction	532nm	Per Type
Cloud	Surface albedo	1064nm	
Stratospheric	Water vapor	1370nm	Per Channel

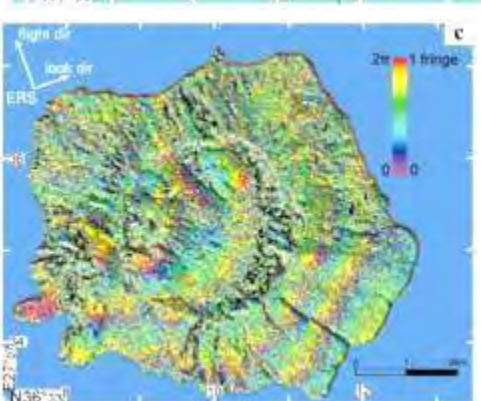
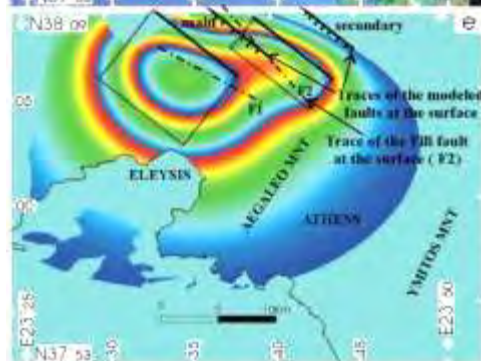
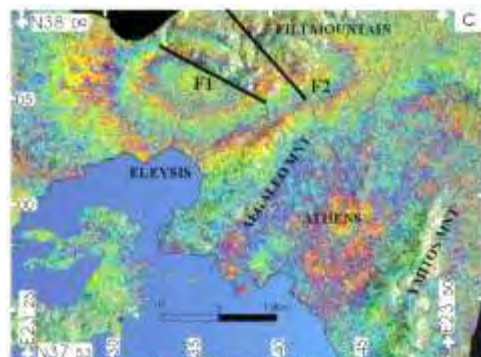
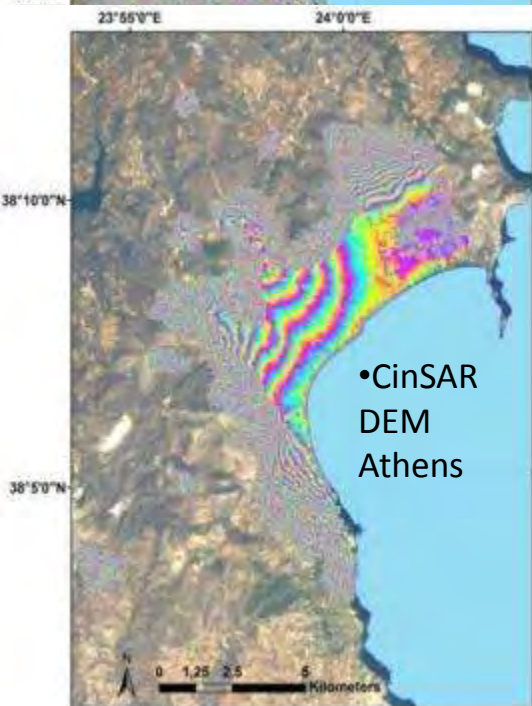
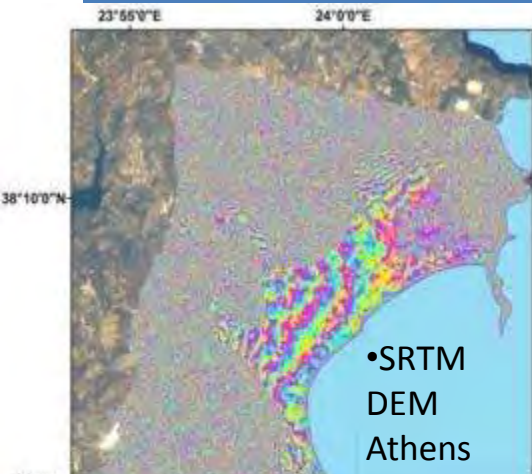
Save to ASCII Save to NetCDF

Grid Selector

Read more >

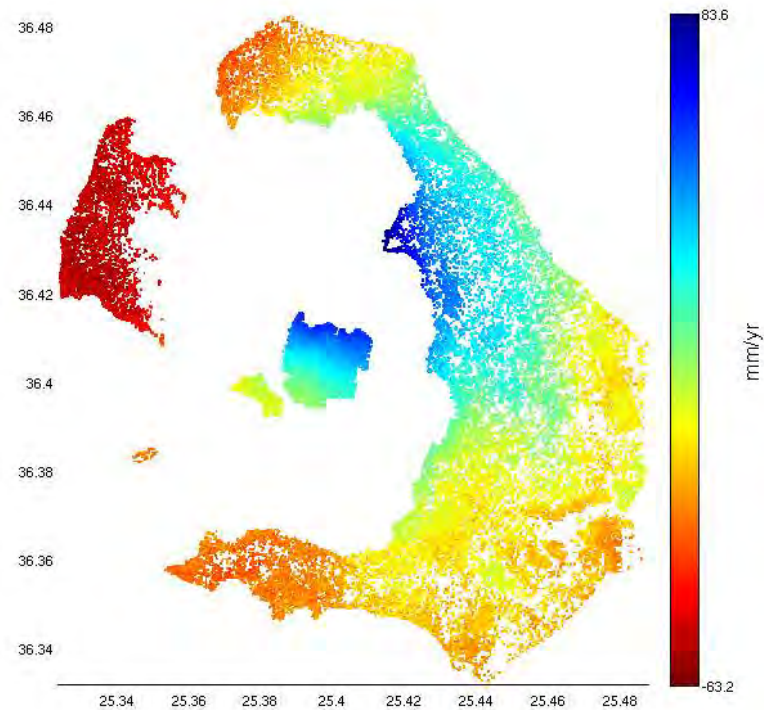
InSAR and CinSAR services

ESA AO ERS & ENVISAT awarded projects



•1999 Athens earthquake
Crustal Post Seismic
Deformation 80-90mm

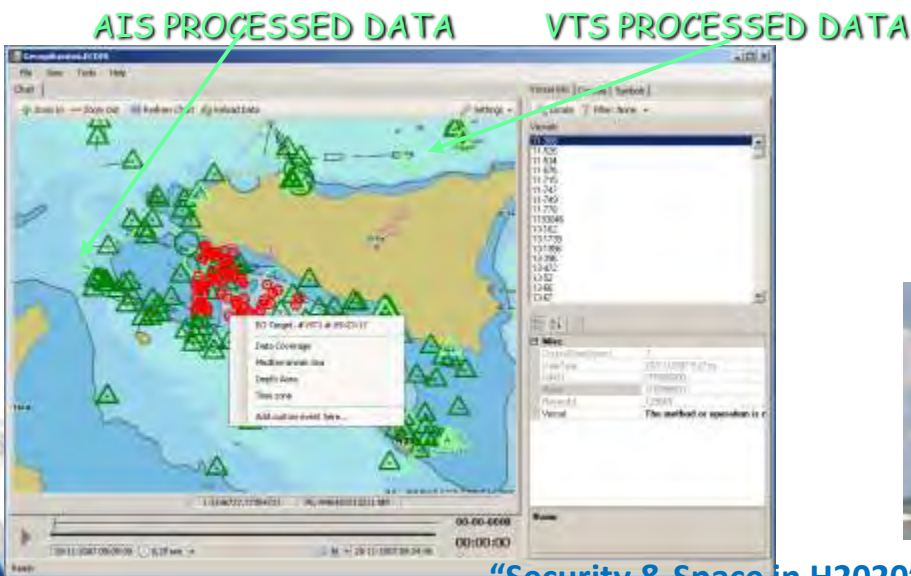
•Santorini volcano unrest
2011-12
•~60000 points
•Deformation rate -
63mm/year - 84mm/year



•Nisiros volcano unrest
Deformation rate 1997-2000
87mm/year

Space based GMES Services

- Forest Monitoring (K-P reporting)
- Marcoast (oil-spill drift forecasting)
- PROMOTE (Air Quality)
- TerraFirma (Land motion)
- Mariss (Maritime Security)
- LIMES (Maritime Border Control)



Space Astronomy and Astrophysics

- Active participation in ESA's "Herschel" cornerstone mission
- Pre-launch and in-orbit operations of the JAXA/ESA "SPICA" mission
- Extend the XMM related activities of the group by constructing online spectral software tools.
- Participated in the development of ESA's "GAIA" mission
- Currently participating in Phase-B of the ESA Proba-3 mission (Electronics)

Background and proposed involvement in ESA's space missions

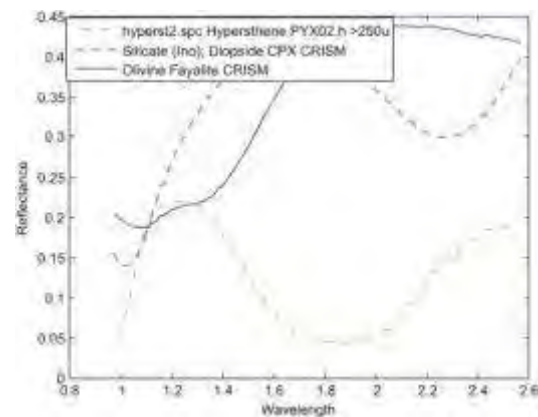
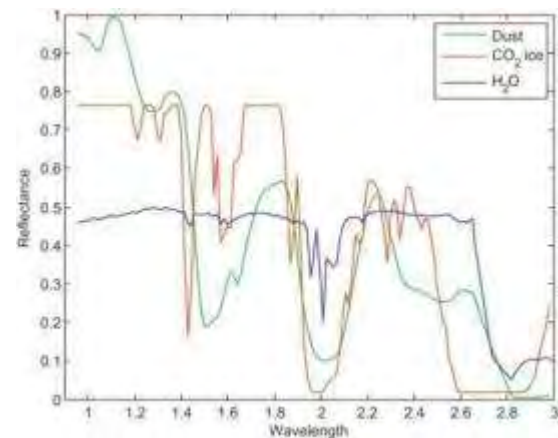
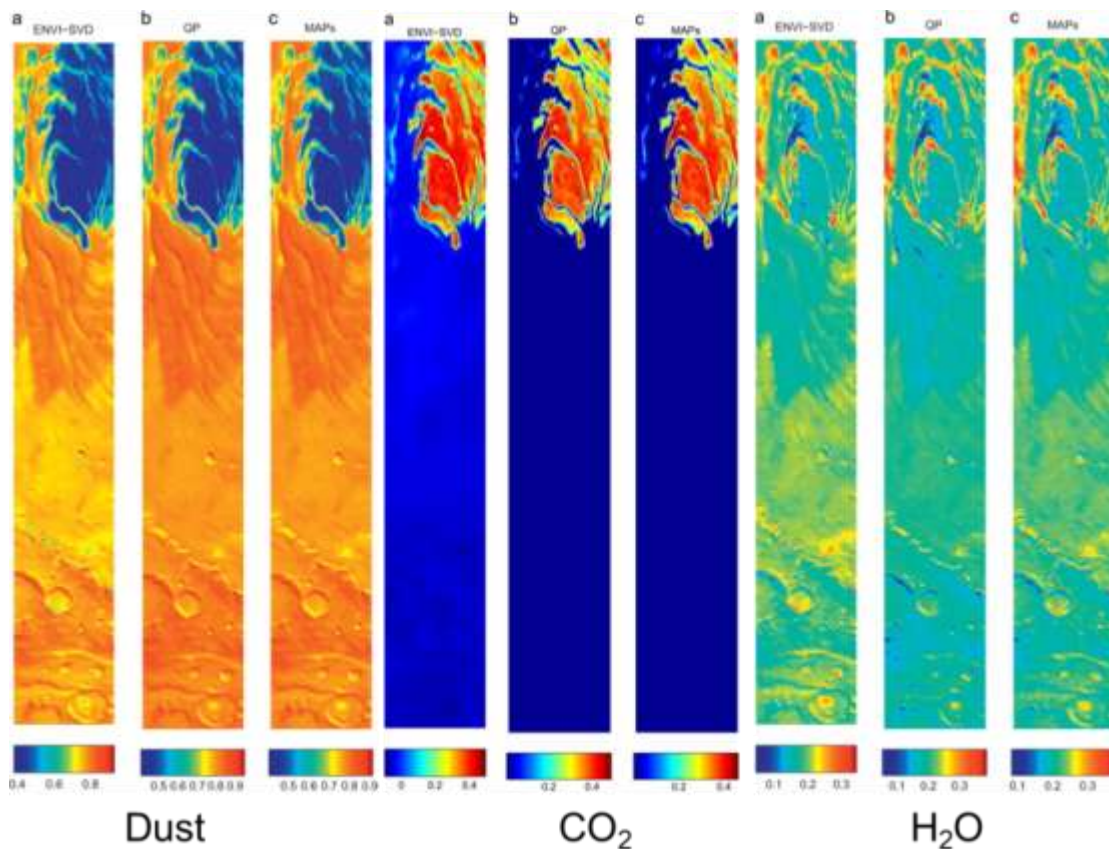
 <p>XMM-Newton</p> <p>The rich publication record of the X-ray Astronomy group and the very extensive experience of X-ray data analysis guarantees a successful involvement in the current developments of this field. The group is currently running an ESA/PRODEX programme. It is proposed to extend the XMM related activities of the group by constructing online (web-based) spectral software tools.</p>	 <p>SPICA</p> <p>With a strong background in infrared astronomy and with an active participation in ESA's "Herschel" cornerstone mission researchers at NOA are interested in contributing in tasks associated with the pre-launch and in-orbit operations of the JAXA/ESA "SPICA" mission as well as in software and database developments.</p>	 <p>Gaia</p> <p>Researchers at NOA actively participate in the Data Processing and Analysis Consortium, responsible for the scientific part of ESA's "Gaia" mission [Coordination Units CU8 and CU2], they are highly interested in participating in the CU9 that will be formed to prepare the Gaia Archive. Currently the group is running an ESA/PRODEX programme.</p>
---	---	---


 <p>The Dome housing ARISTARCHOS telescope on top of mount Helmos (2340 m).</p>	 <p>The 2,3 m ARISTARCHOS telescope</p>	 <p>Kryoneri Observatory. The dome housing the 1.2 m telescope.</p>	<p>Existing facilities</p> <p>IAASARS operates the 2.3 m ARISTARCHOS telescope and the 1.2 m Kryoneri telescope.</p> <p>These facilities can be used for follow-up observations of X-ray and infrared surveys</p>
--	--	---	--

Space exploration and monitoring

- Support of upcoming and future space exploration and monitoring missions.
- Planetary exploration through Hyperspectral imaging

Mars/South Polar Cup - Mex/Omega measurements – LINEAR UNMIXING TECHNIQUES - ABUNDANCE MAPPING





**Thank you for your
attention!**