

## Asian Dust Events

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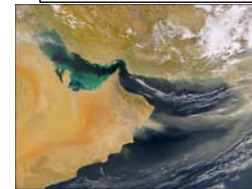
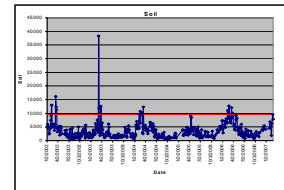
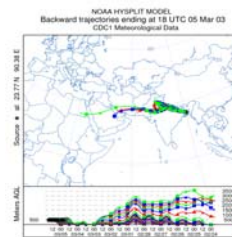
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## Soil Dust Event

05 March 2003, Soil concentration  
was 38349 ng/m<sup>3</sup>



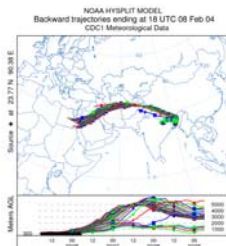
Two thick plumes of desert dust (light browns) were blowing over Oman and across the Gulf of Oman toward Iran and Pakistan on February 18, 2003

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## Soil Dust Event



Dust storm activity has been high across a large part of Africa and the Middle East during early February 2004

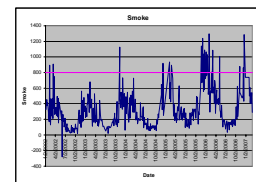
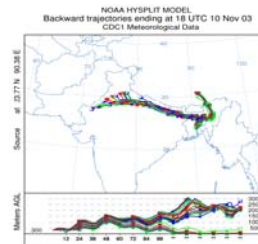
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## Smoke Event

10 November 2003, Smoke  
concentration was 1124 ng/m<sup>3</sup> and  
BC concentration was 25371 ng/m<sup>3</sup>



Smoke from agricultural fires in northern India continues to back up against the Himalaya Mountains on November 6, 2003, it started from November 3 2003

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## Progress Report SMOKE and SOIL EVENTS

Characterization and Source Identification of  
Particulate Air Pollution in the Asian Region  
(RAS/7/015)

Daejeon Korea, 17 July 2009

Muhayatun Santoso  
Center of Nuclear Technology for Materials and Radiometry  
BATAN, INDONESIA

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## SMOKE (October – November 2006)

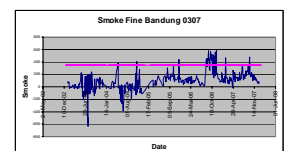
Dozen of large fires was burning on North & Northwestern Australia (active fire seasons)

Date NASA : 4 Oct 2006 & Oct-Nov-Dec

Date Data : 10 Oct 2006 (507 ng/m<sup>3</sup>)

Average + 2SD : 348 ng/m<sup>3</sup>

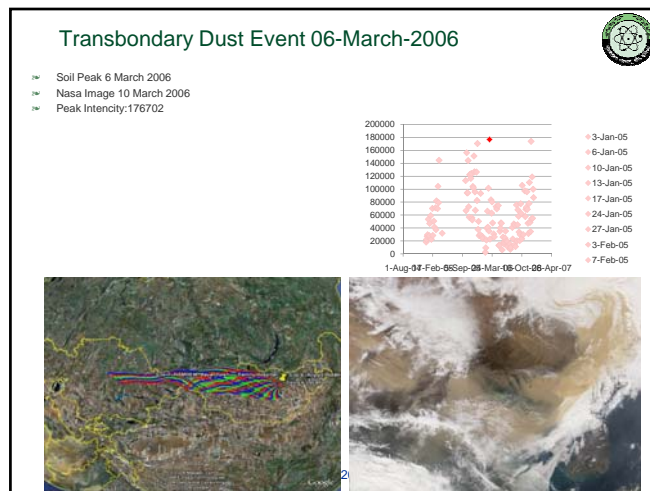
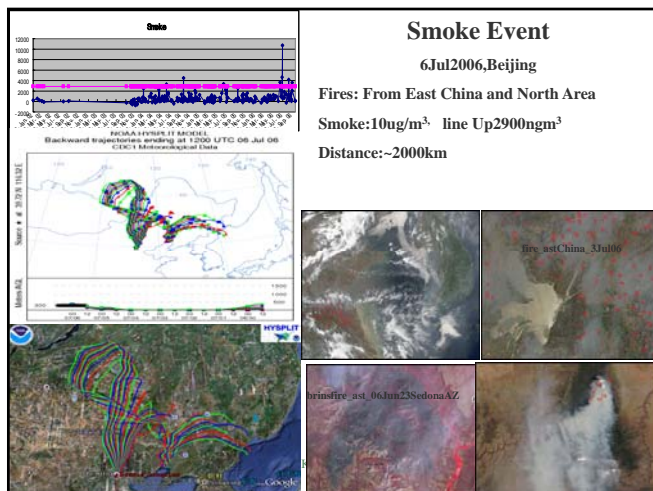
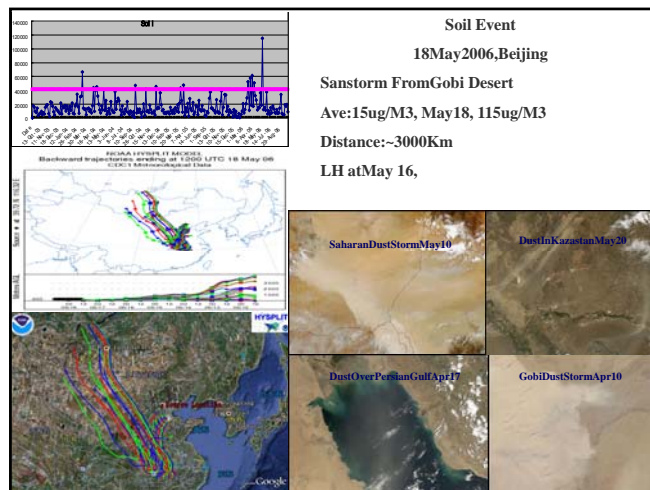
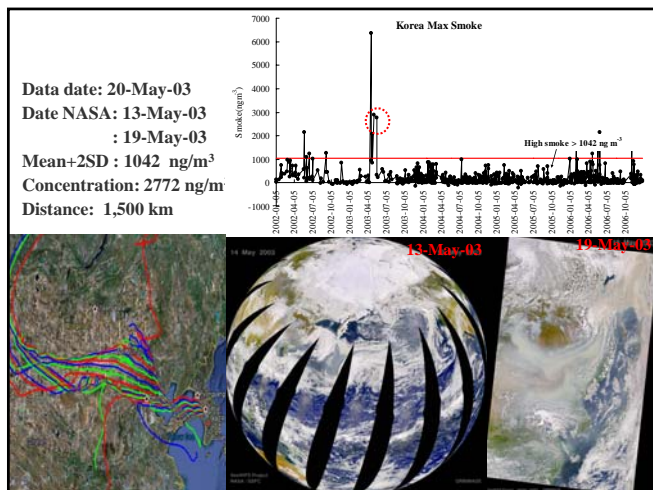
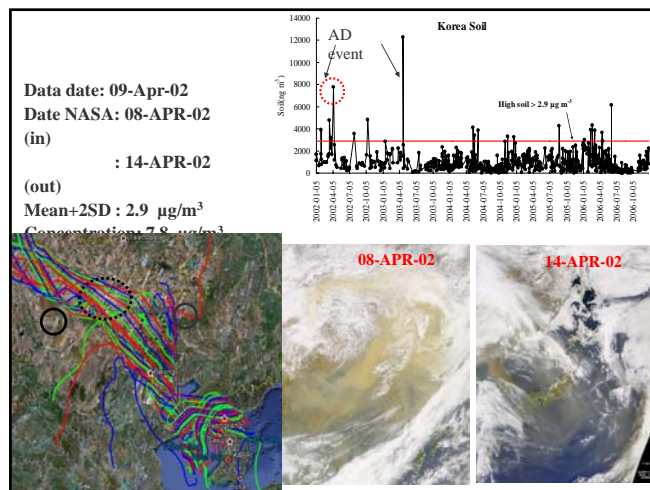
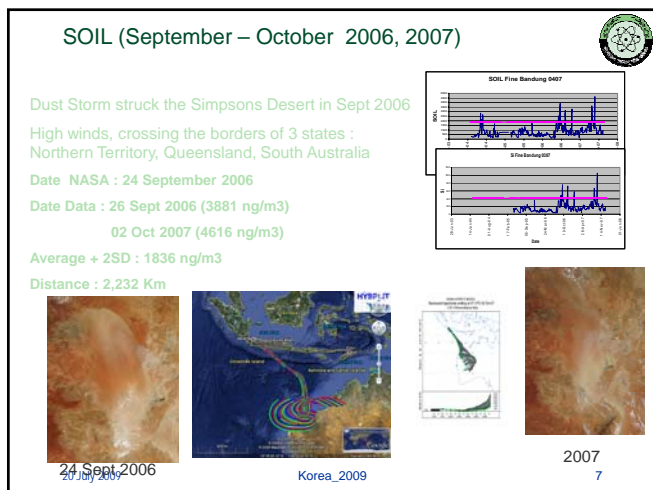
Distance : 3,036 Km

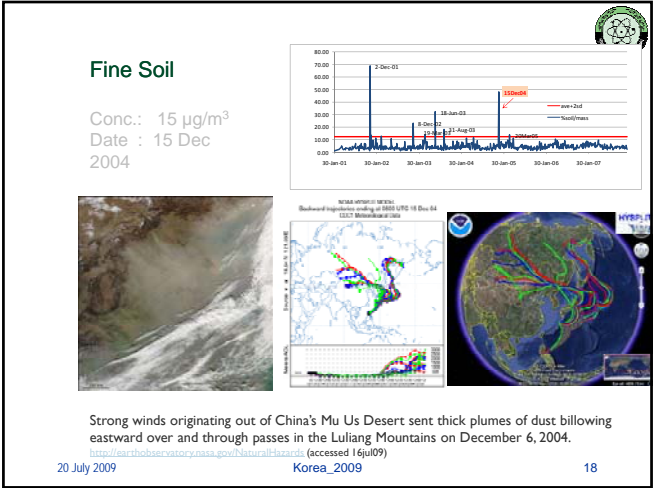
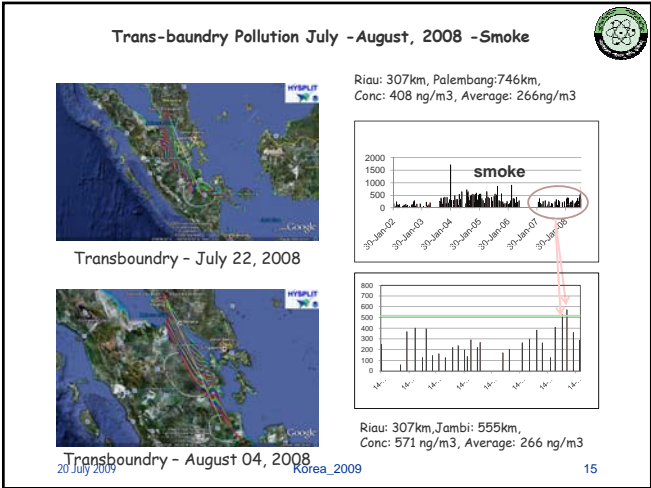
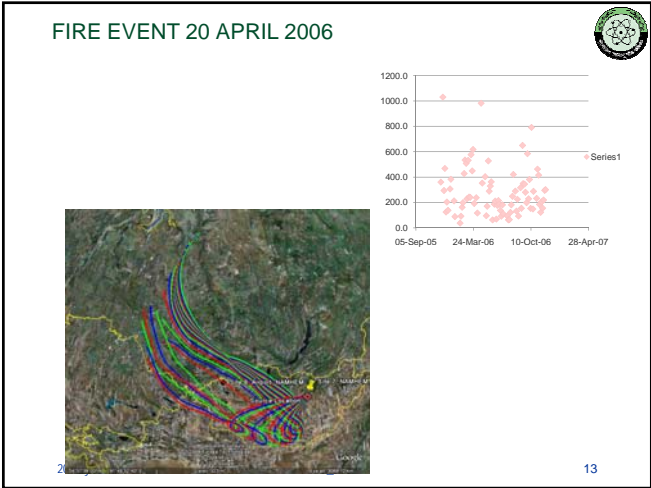


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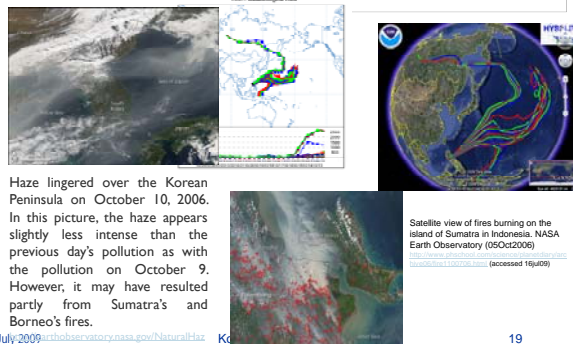
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## Fine Smoke

Conc.: 147ng/m<sup>3</sup>  
Date : 25 Oct 2006



20 July 2009: [www.nasa.gov/NaturalHazards/](http://www.nasa.gov/NaturalHazards/) (accessed 16Jul09)

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## Asia Dust Events and Source Profiles

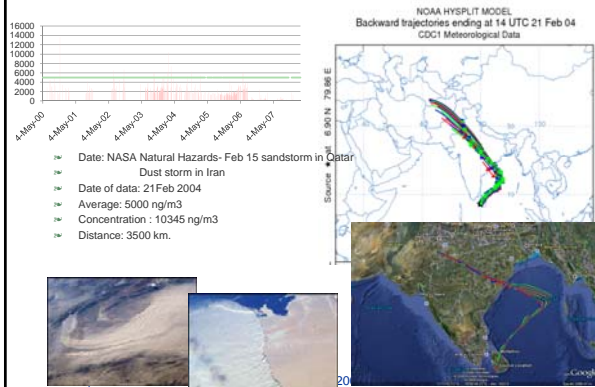
Shirani Seneviratne  
SRI LANKA

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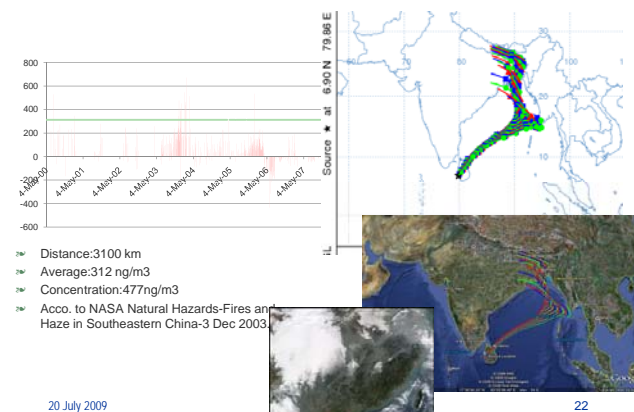
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## Soil Trajectory-21 Feb 2004



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## Smoke Trajectory-12 Dec.2003/31 Dec.2003



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## Events & Scientific Evidences on LRT of Fine Soil & Smoke into HN, VN

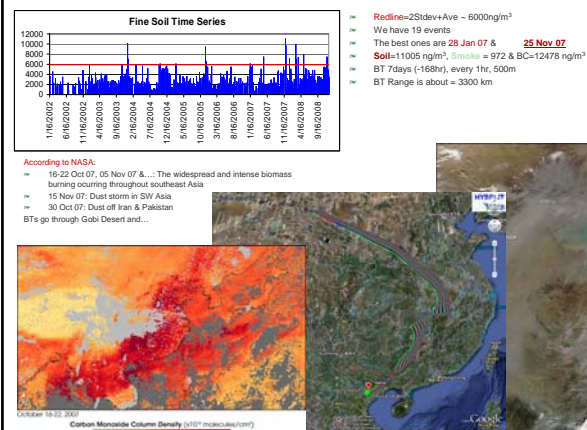
Nuri Hall, KAERI, 17 July 2009  
Vuong Thu Bac

20 July 2009

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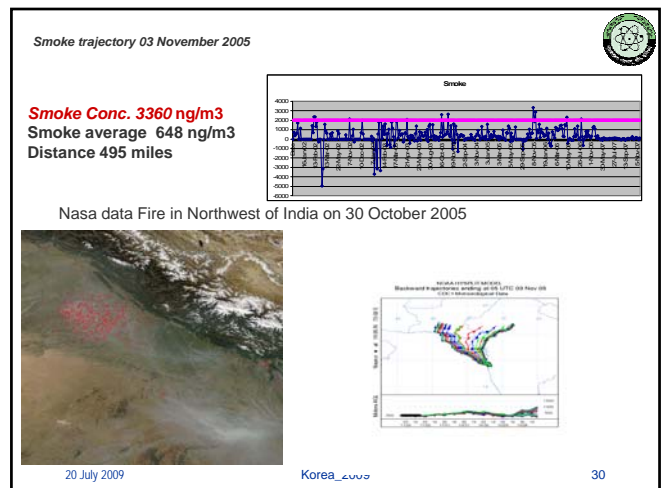
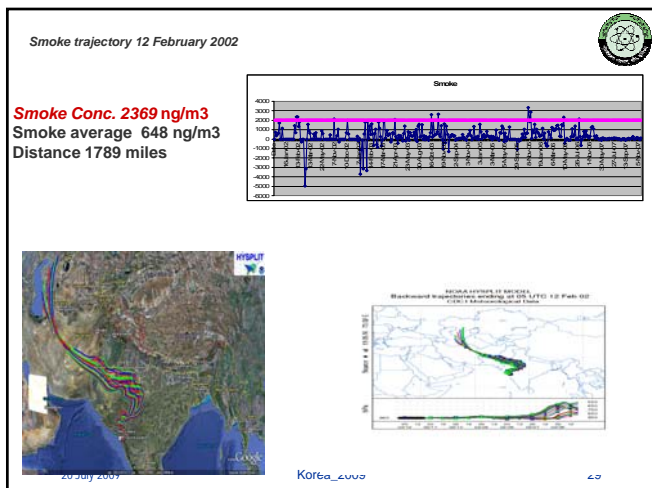
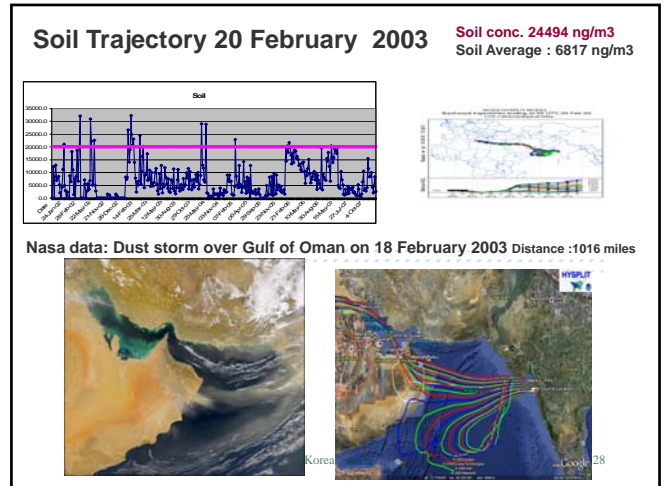
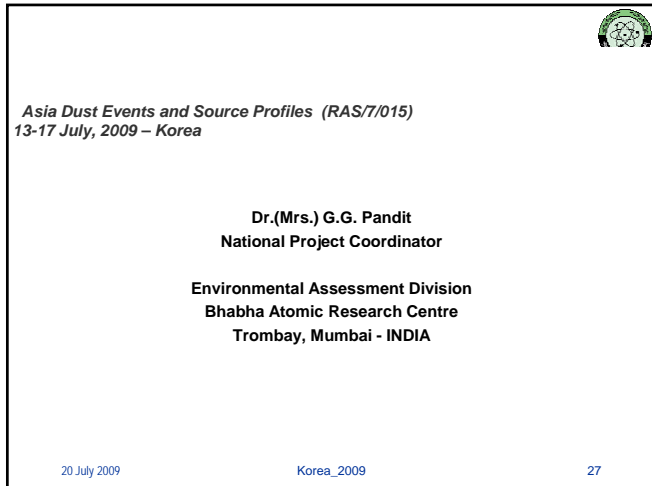
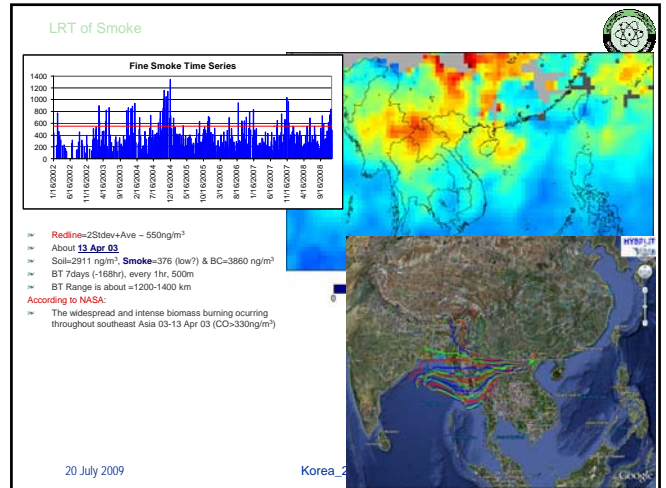
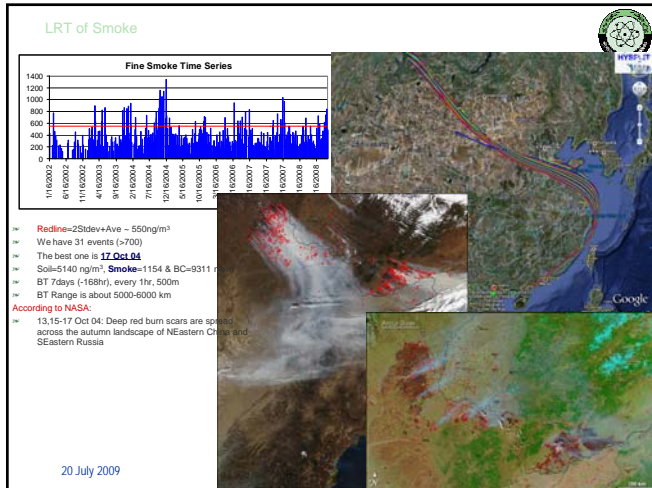
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## LRT of Fine Soil & Smoke



October 16-22, 2007

Carbon Monoxide Column Density (DU) (molecules/cm<sup>2</sup>)





UNDP/IAEA/RCA/RAS/7/015 Project

Characterization and Source Identification of Particulate Air Pollution in the Asian Region

Shahida Waheed

PAKISTAN INSTITUTE OF NUCLEAR SCIENCE AND TECHNOLOGY ISLAMABAD, PAKISTAN

20 July 2009

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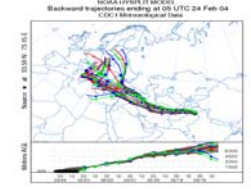
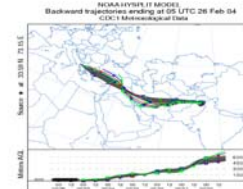
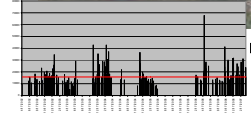
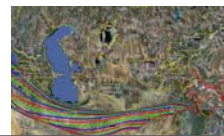
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### High dust event in Pakistan

Major Dust Storm East of Bam, Iran on February 15, 2004



26-Feb-2004 42800ng/m3  
24-Feb-2004 21739ng/m3



### Transboundary Australia-NZ events – well almost

- 1<sup>st</sup> attempt: investigated high soil and high smoke events. **Unsuccessful**
  - Used sampling data from the Wellington region
  - High soil events related to high winds from the SE sector in the southern ocean.
  - High smoke events prominent during calm cold wind events from the southern ocean.
- 2<sup>nd</sup> attempt: investigated if Wellington region detected APM from Australian events. **Unsuccessful**
- 3<sup>rd</sup> attempt: investigated Australian event forward trajectories. **Almost successful**

23 October, 2002 major dust storm north Australia.

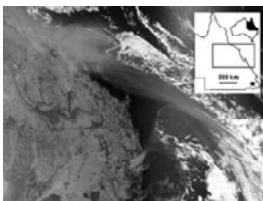
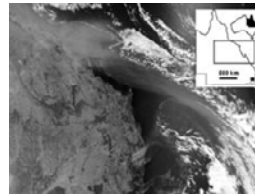


Fig. 2. The 23 October, 2002 major dust storm. This SeaWiFS image (courtesy of NASA) shows the storm ca. 2400 km long x 400 km wide, 1.5-2 km high; inset map = Brisbane.

23 October, 2002 major dust storm north Australia.



7 day forward trajectory

24 10 2002 Masterton  
29 10 2002 Masterton  
6 11 2002 Masterton

= Missed it!!

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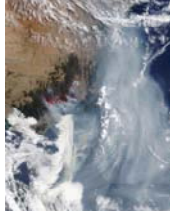
### Biomass Burning in Eastern Australia

January 7, 2003



### Bushfires Raging in Southeast Australia

February 7, 2003



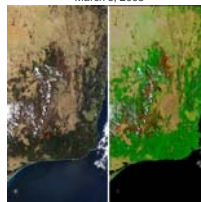
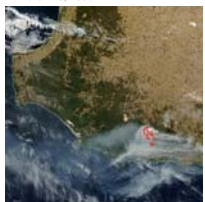
### Forest Fire in Southwest Australia

March 11, 2003



### Forest Fire in Southwest Australia

March 13, 2003



### Seaview



### Masterton



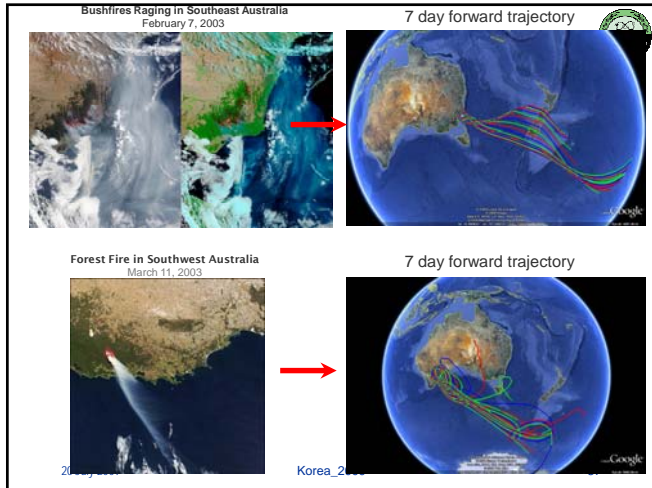
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17/01/2003	3.07	487.9	36.0	220.3	165.3	20.6
23/01/2003	2.80	826.1	33.3	128.8	227.8	12.4
28/01/2003	1.94	684.2	42.9	119.9	116.1	10.5
19/02/2003	1.84	589.3	9.8	28.5	64.2	3.0
28/02/2003	2.10	786.4	6.4	36.8	37.5	3.1
23/03/2003	1.04	458.6	3.3	25.8	1.2	5.1

Date on	PM <sub>2.5</sub>	BC	SI	Cl	K
6/01/2003	2.00	426.1	522	1819	654
21/01/2003	1.46	6130	970	2597	954
11/02/2003	1.99	2828	533	38	327
20/02/2003	1.87	8448	530	2264	766
7/03/2003	0.73				
27/03/2003	0.95				

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**IAEA/RCA Executive Meeting on Asia Dust Events and Source Profiles**

Daejeon, Republic of Korea  
13-17 July 2009

**Ms AYE THI TAR**

**Final Presentation**

Department of Atomic Energy (DAE)  
Myanmar

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