

SEVIRI APPLICATIONS ON DUST STORMS AT TURKEY

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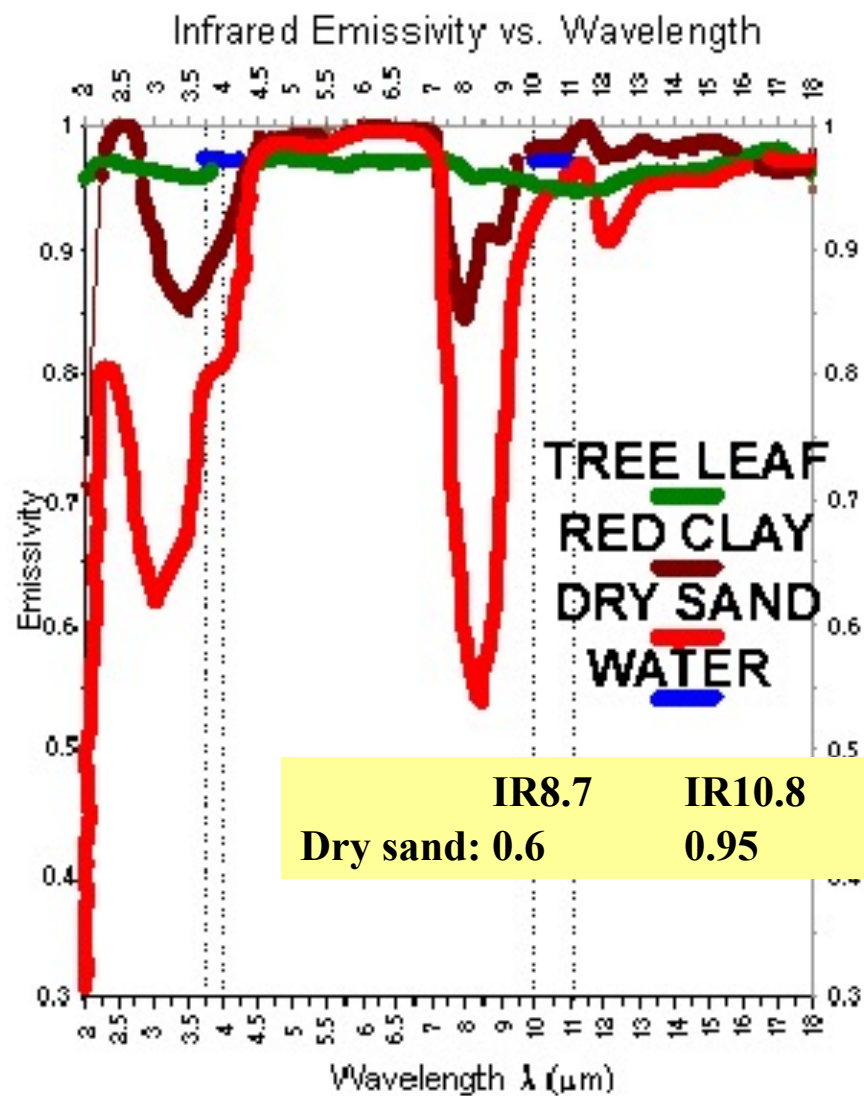
SEVIRI Channels & Applications

SEVIRI Channels	Applications
VIS0.6	Optical tickness
VIS0.8	Optical thickness, vegetation
NIR1.6	Ice&snow detection, partical size & phase
IR3.9	Ice&snow, partical size & phase, fire, fog, sun glint, SST
WV6.2	Upper level moisture
WV7.3	Mid level moisture
IR8.7	Top temperature, dust
IR9.7	Ozone
IR10.8	Top temperature, cloud analysis, convection, CTH
IR12.0	Top temperature, LST, SST
IR13.4	CO ₂
HRV	Cloud detail (1 km)

SEVIRI Channels & RGB Composites for Dust Storm

- IR Channels IR12.0 ,IR10.8, IR8.7 & IR3.9
- VIS and HRV Channels
- Channel Difference Application (IR8.7 – IR10.8)
- “Dust” RGB

Dust Storms



Dust

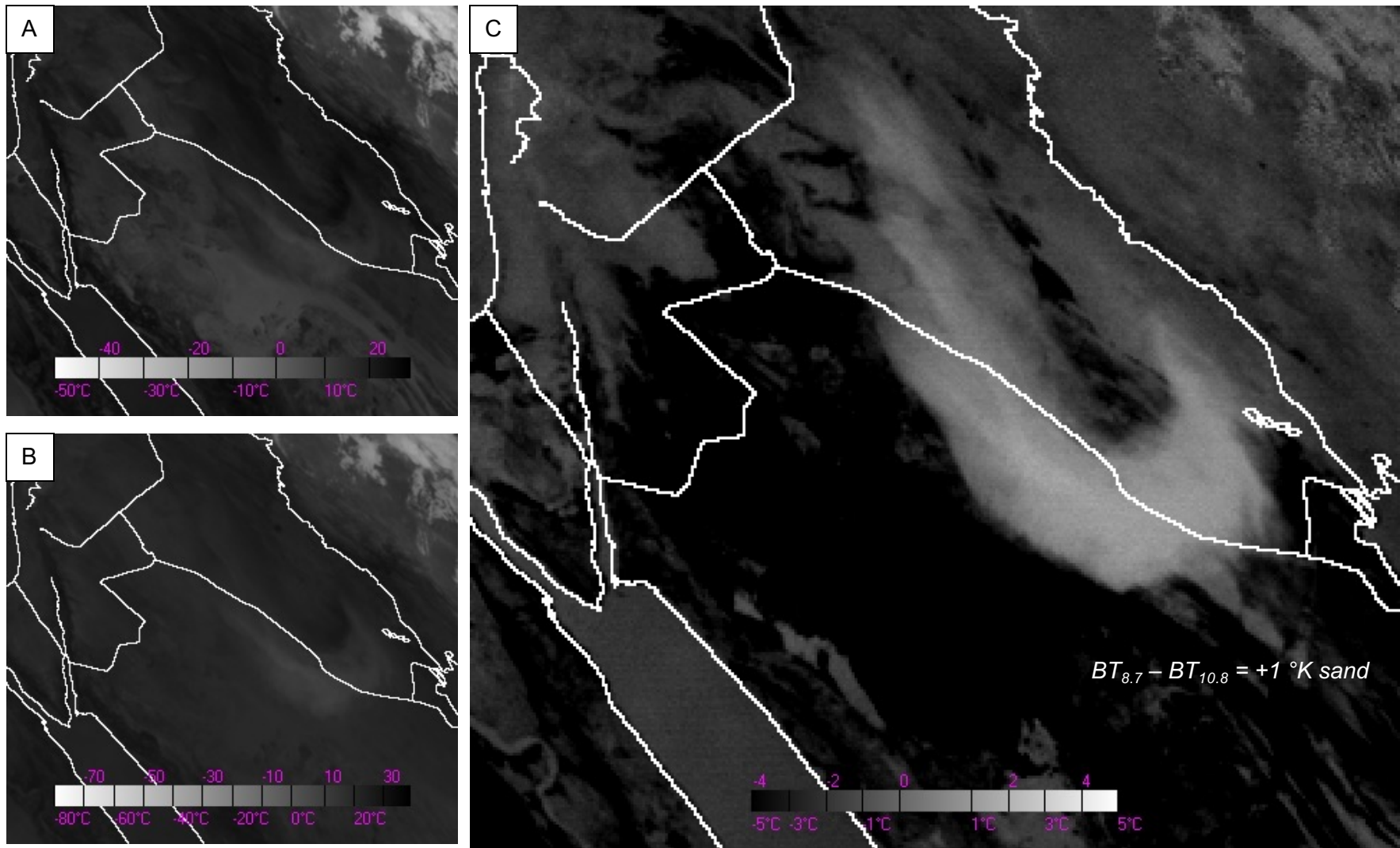
BTD IR12.0 – IR10.8 \rightarrow + 2-4 $^{\circ}\text{C}$

BTD IR8.7 – IR10.8 \rightarrow + 1-2 $^{\circ}\text{C}$

Emissivity as a function of wavelength and surface type

END/COMET

Dust Storm – Channel Difference Application



Dust storms over Middle East, MSG 2 25 June 2007 18:45 UTC. A IR8.7, B IR10.8, C Temperature difference of IR8.7 and IR10.8'

RGB 10-09, 09-07, 09 ("Dust")

R = Difference IR12.0 - IR10.8

G = Difference IR10.8 - IR8.7

B = Channel IR10.8

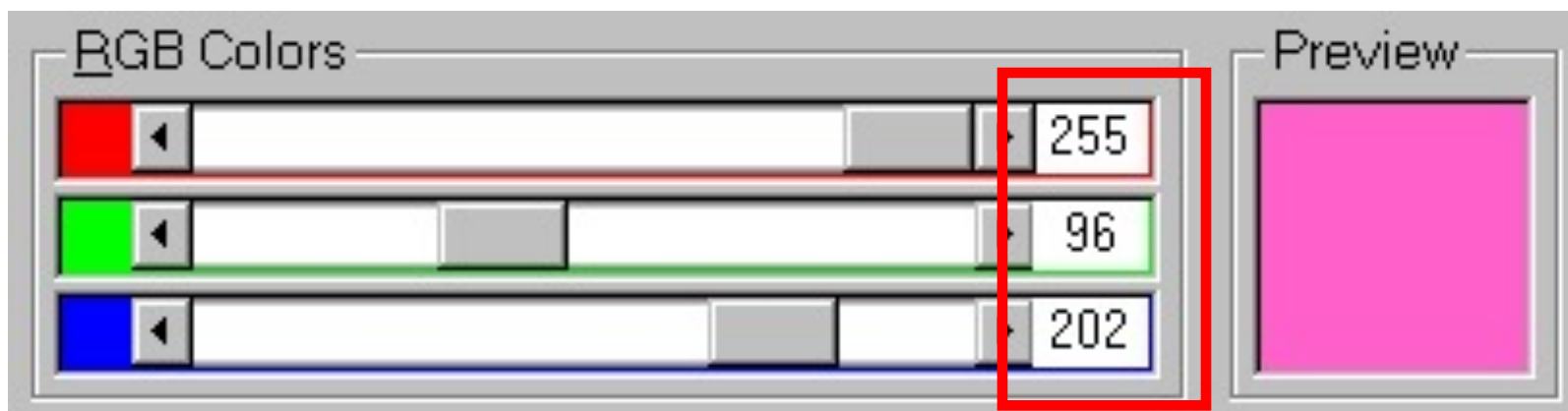
Applications:	Dust, Thin Clouds, Contrails
Area:	Full MSG Viewing Area
Time:	Day and Night

RGB 10-09, 09-04, 09 Example: Dust

10 - 09

09 - 07

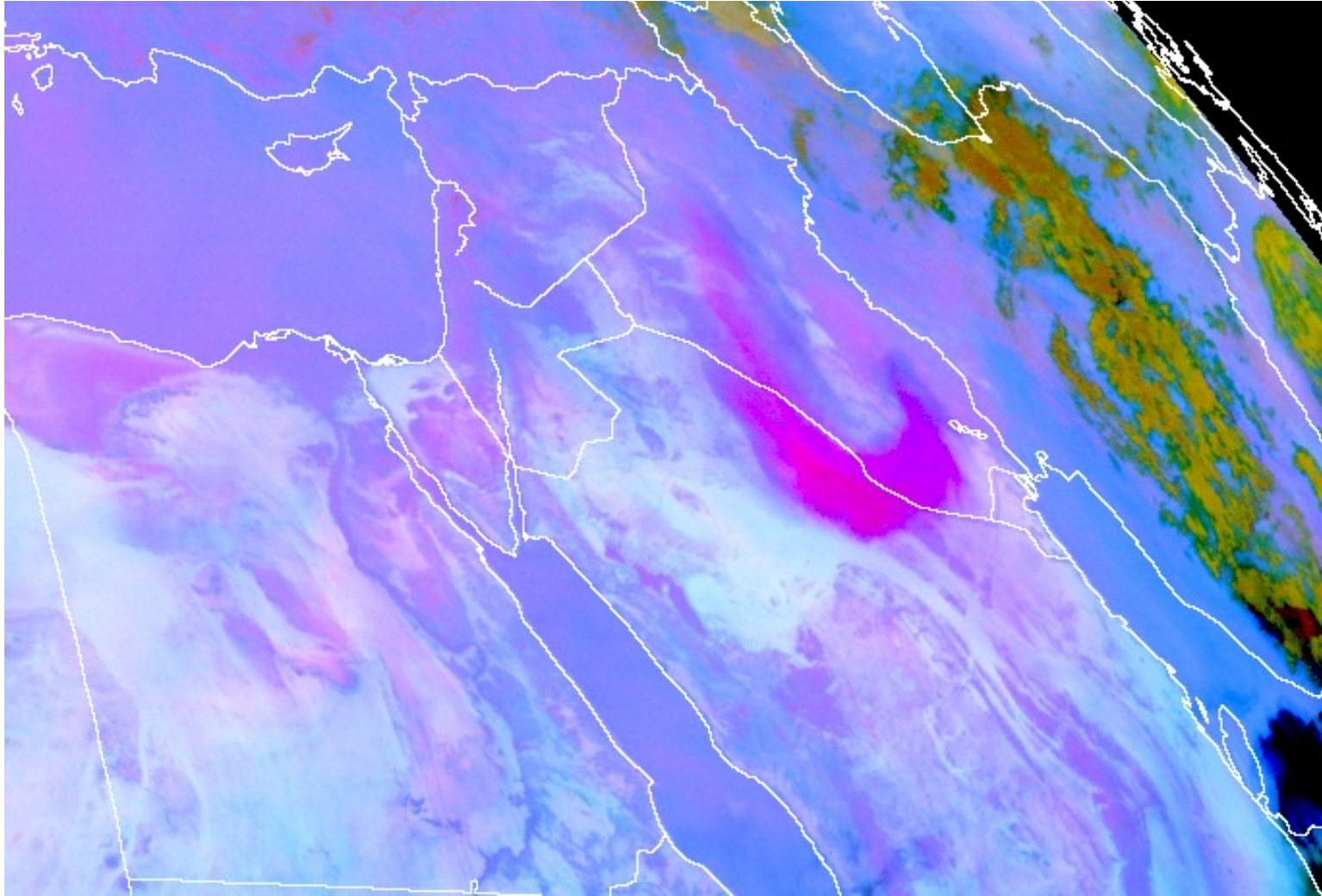
09



In RGB 10-09,09-07,09 images, dust appears in magenta colours

The values shown above (in the red box) correspond to the location (shown by an arrow) on the next slide

RGB 10-09, 09-07, 09 Example: Dust



MSG-2, 25 June 2007, 18:45 UTC, Dust storm over Middle East.

Main dust (storm) sources affected Turkey



Some dust (storm) events over Turkey

09.09.2008
Mardin



10.03.2008
Şanlıurfa, Viranşehir



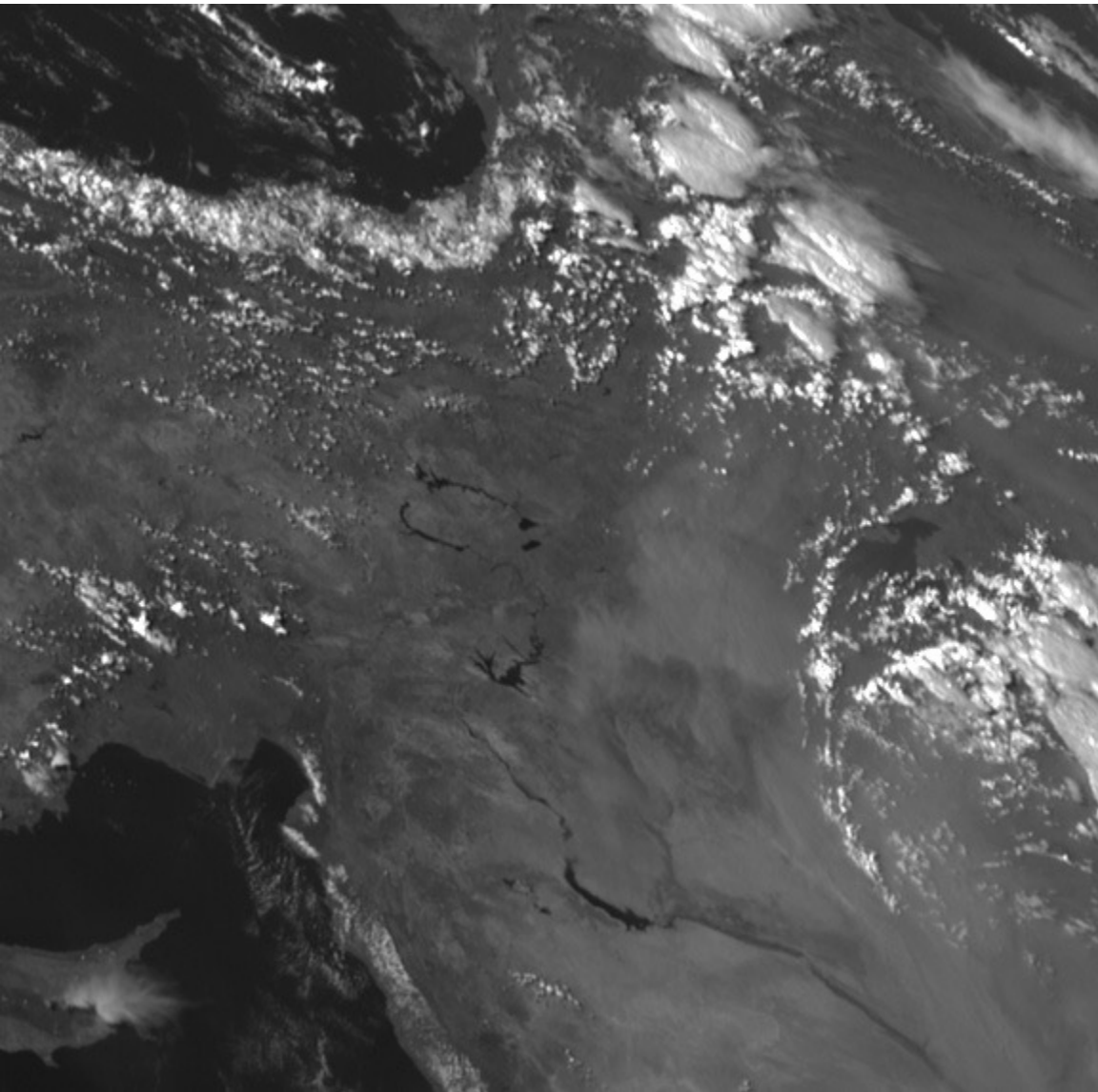
23.03.2008
Çanakkale



10.02.2009
Şanlıurfa



September 2009



www.haberler.com

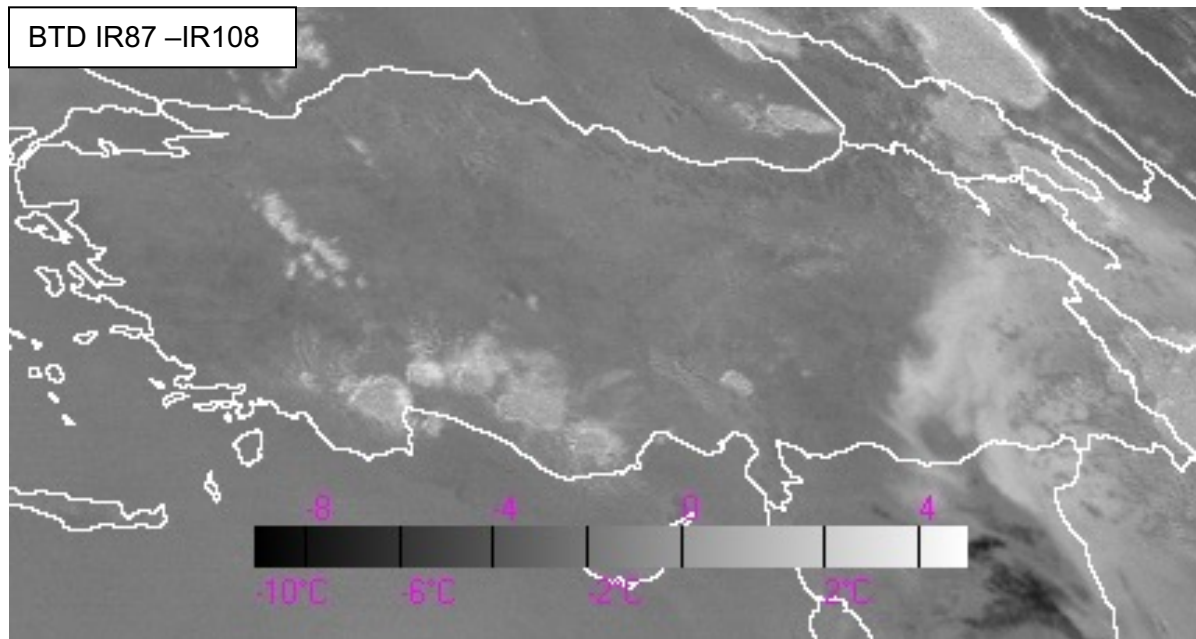
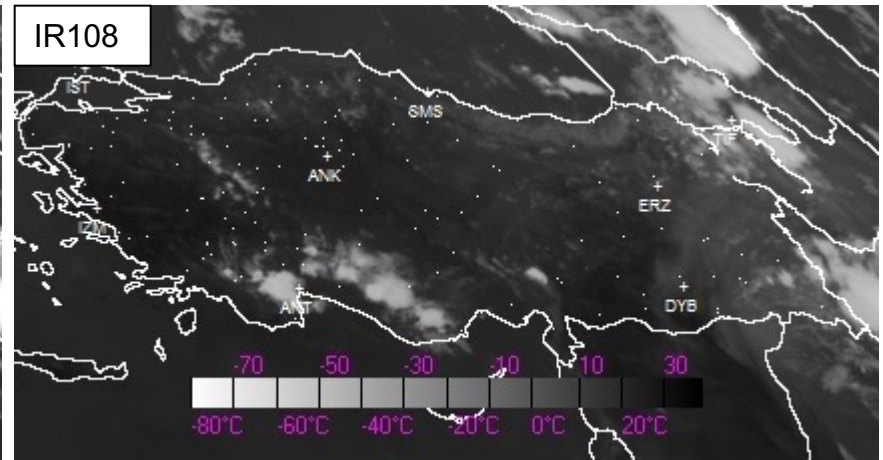
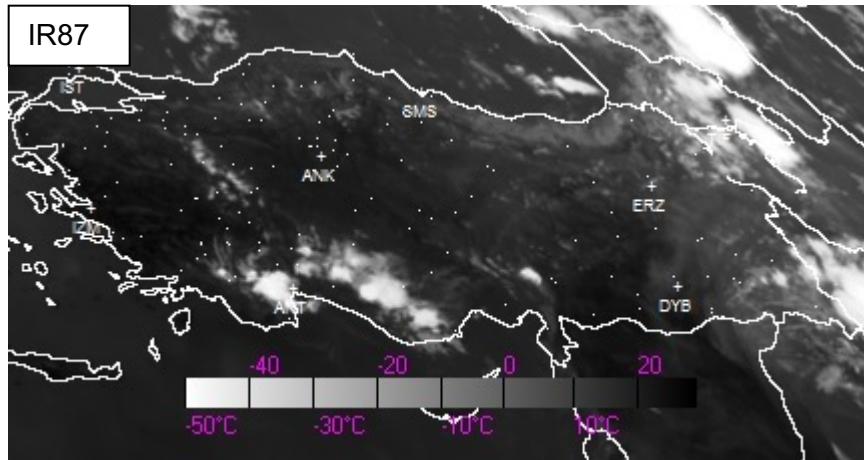


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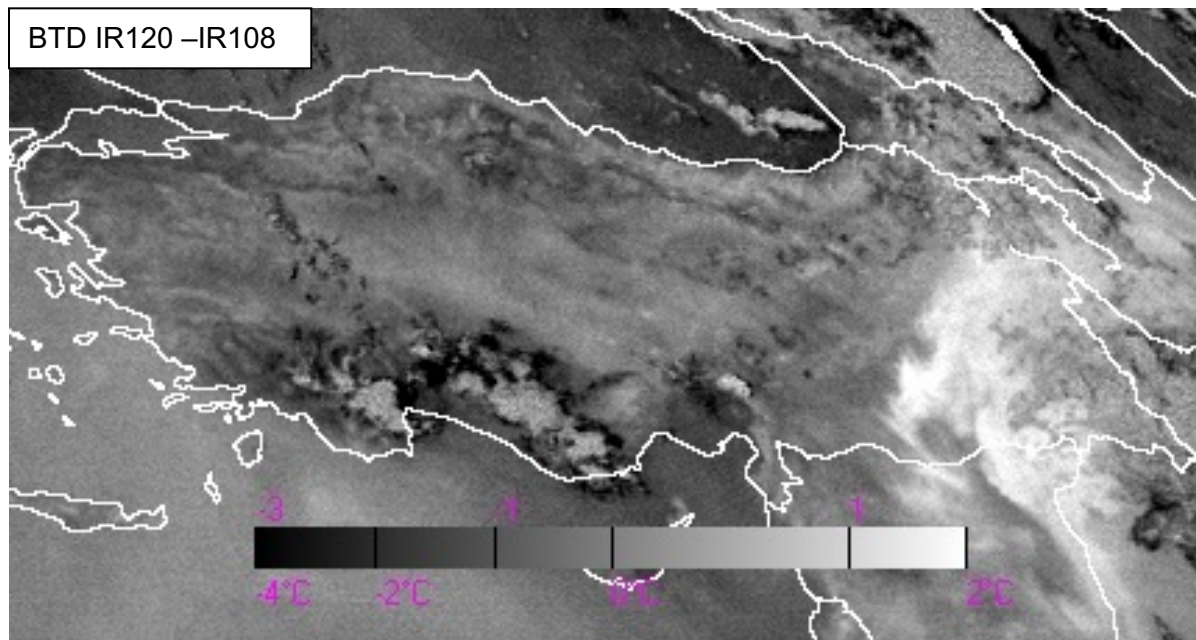
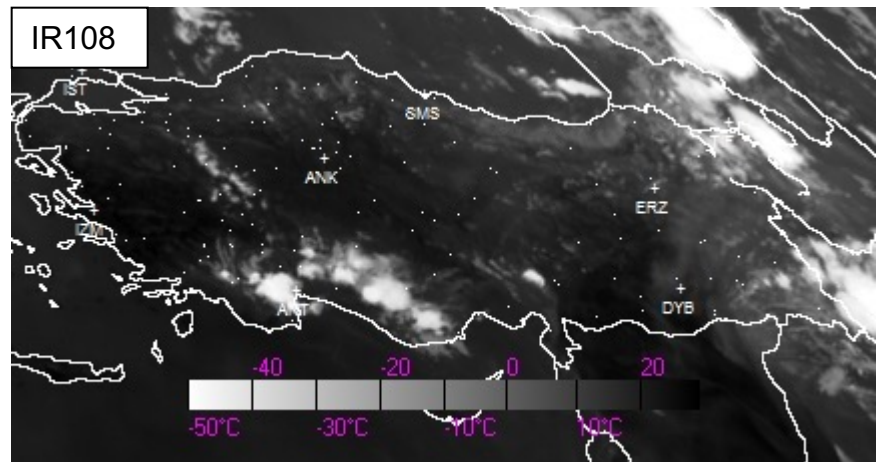
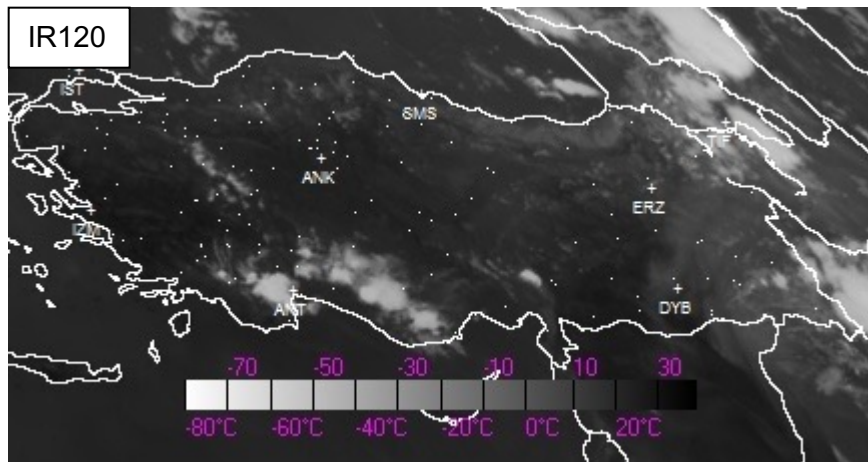
2nd. Training Course on WMO SDS-WAS
21 – 25 November 2011, Antalya, Türkiye

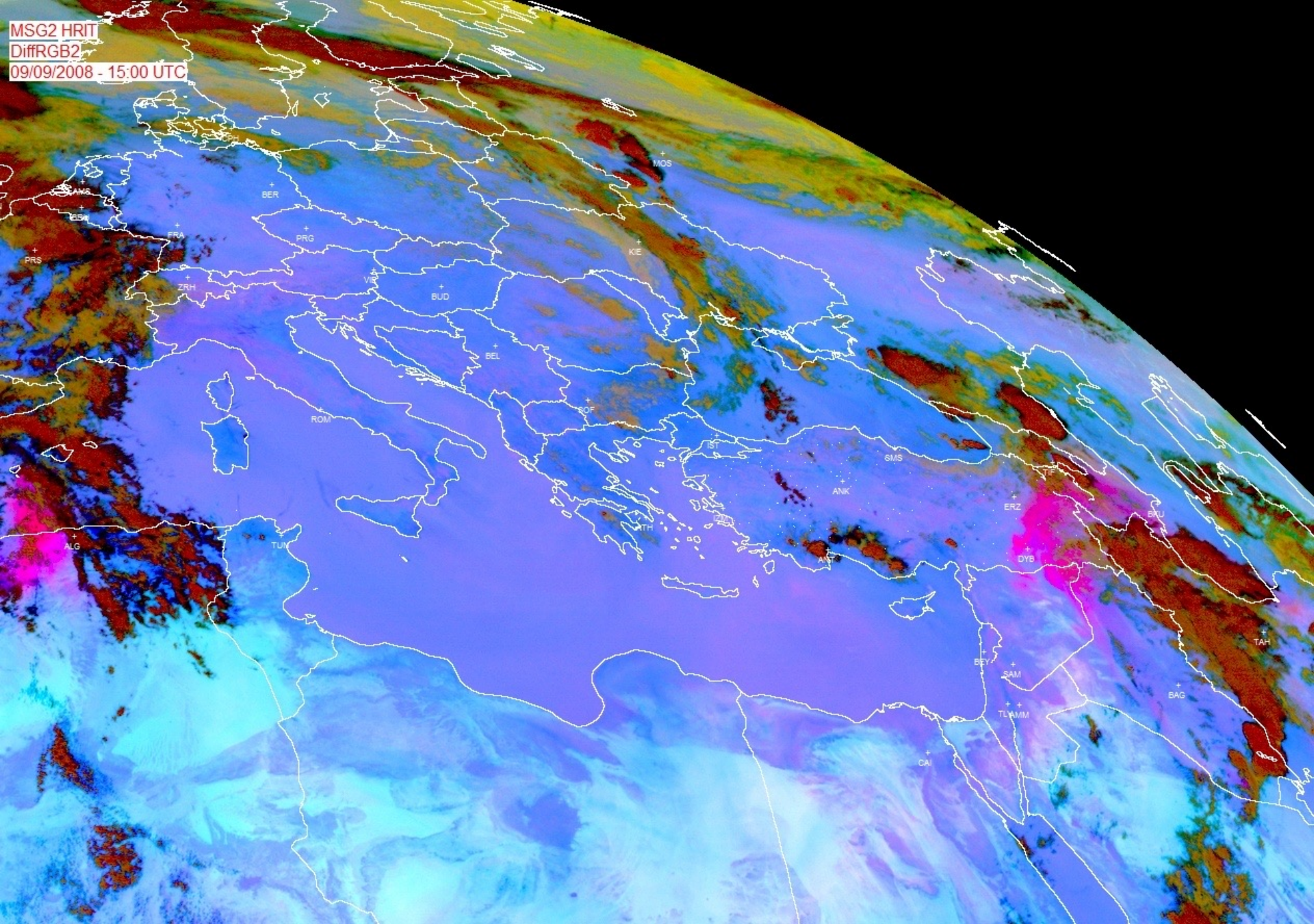
 **EUMETSAT**

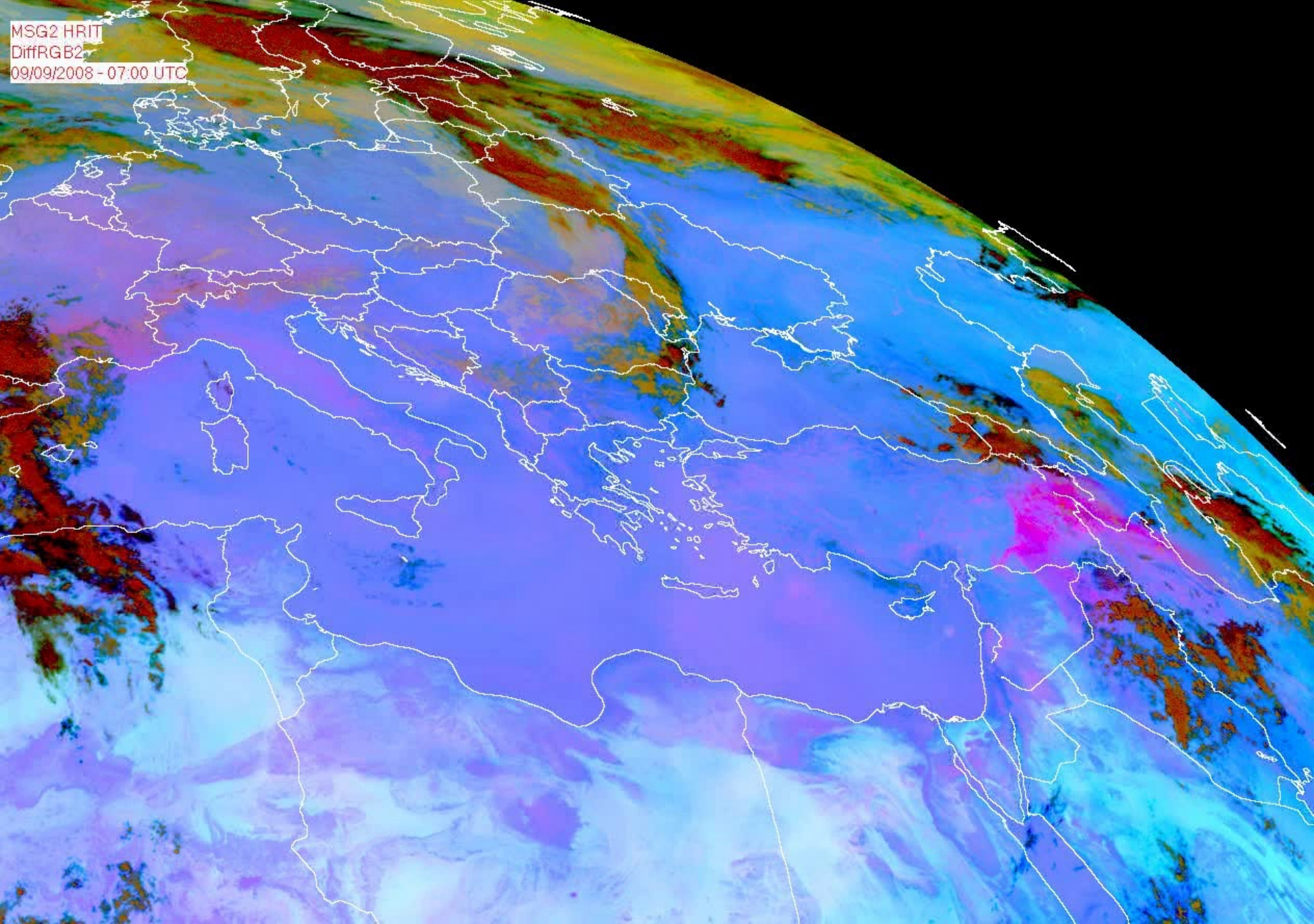
IR BTD Application (IR87 – IR108)



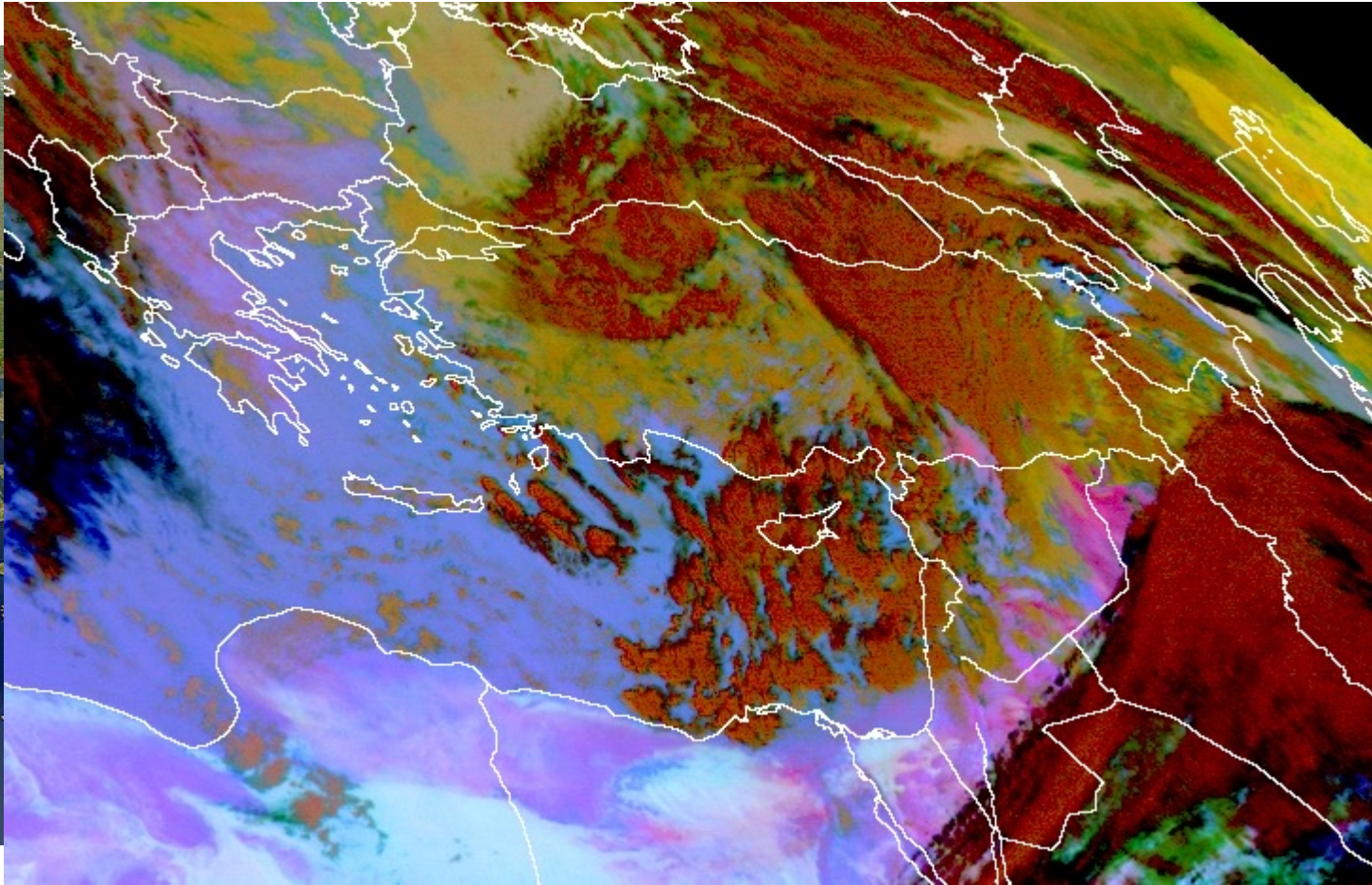
IR BTD Application (IR120 – IR108)



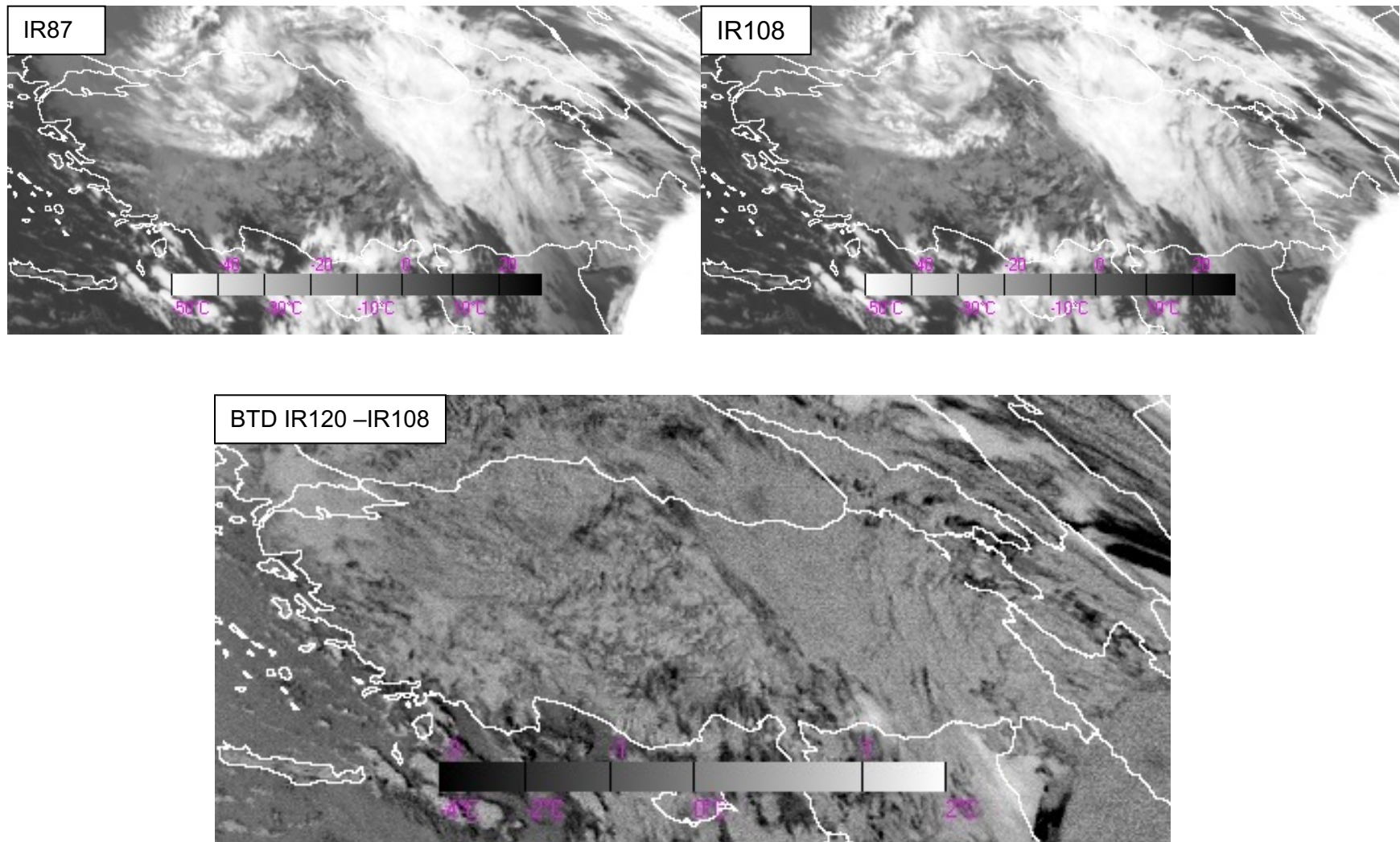




Dust in Şanlıurfa 10 February 2009

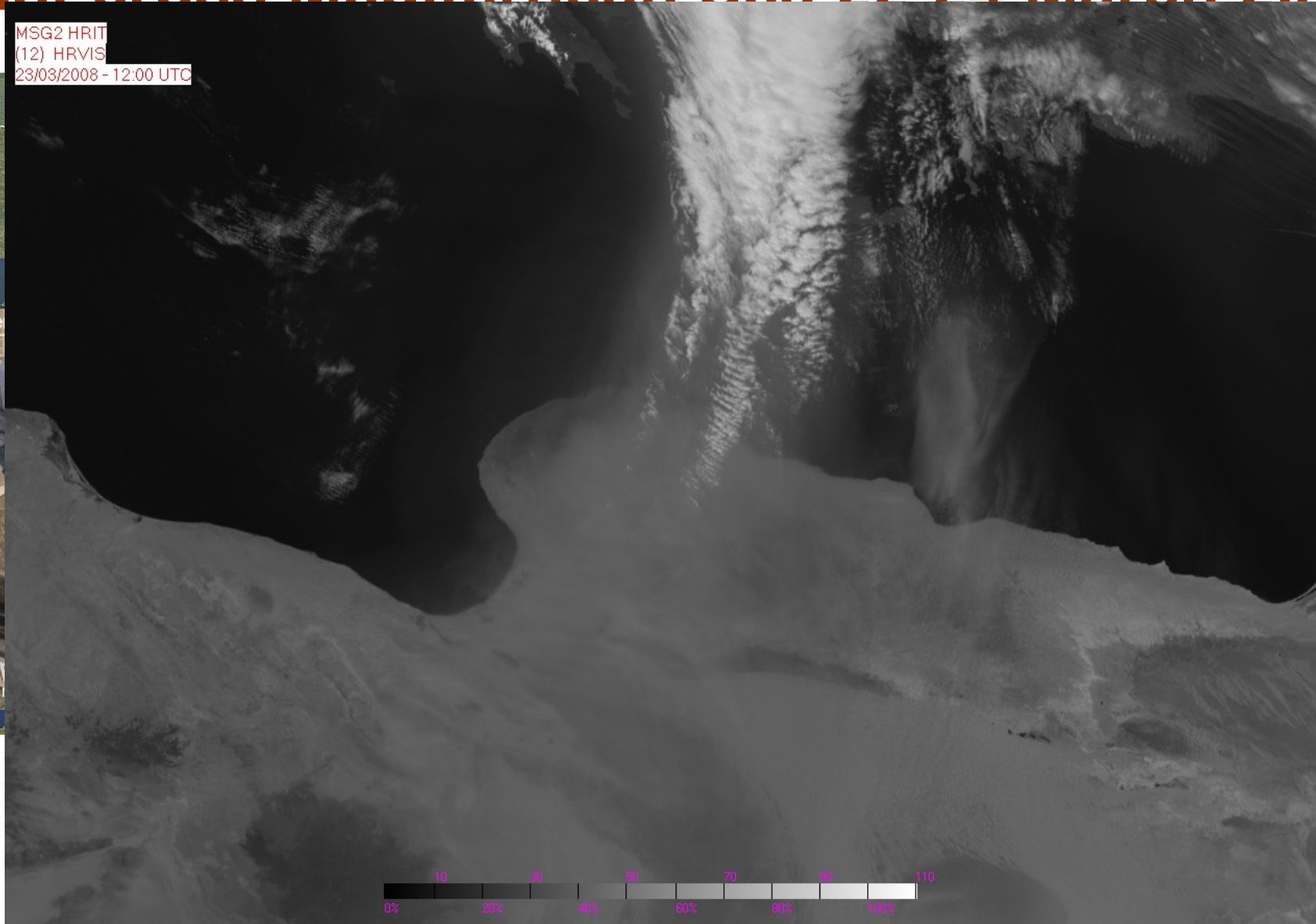


IR BTD Application (IR120 – IR108)



Dust cross Mediternean Sea 22-24 March 2008

MSG2 HRIT
(12) HRVIS
23/03/2008 - 12:00 UTC

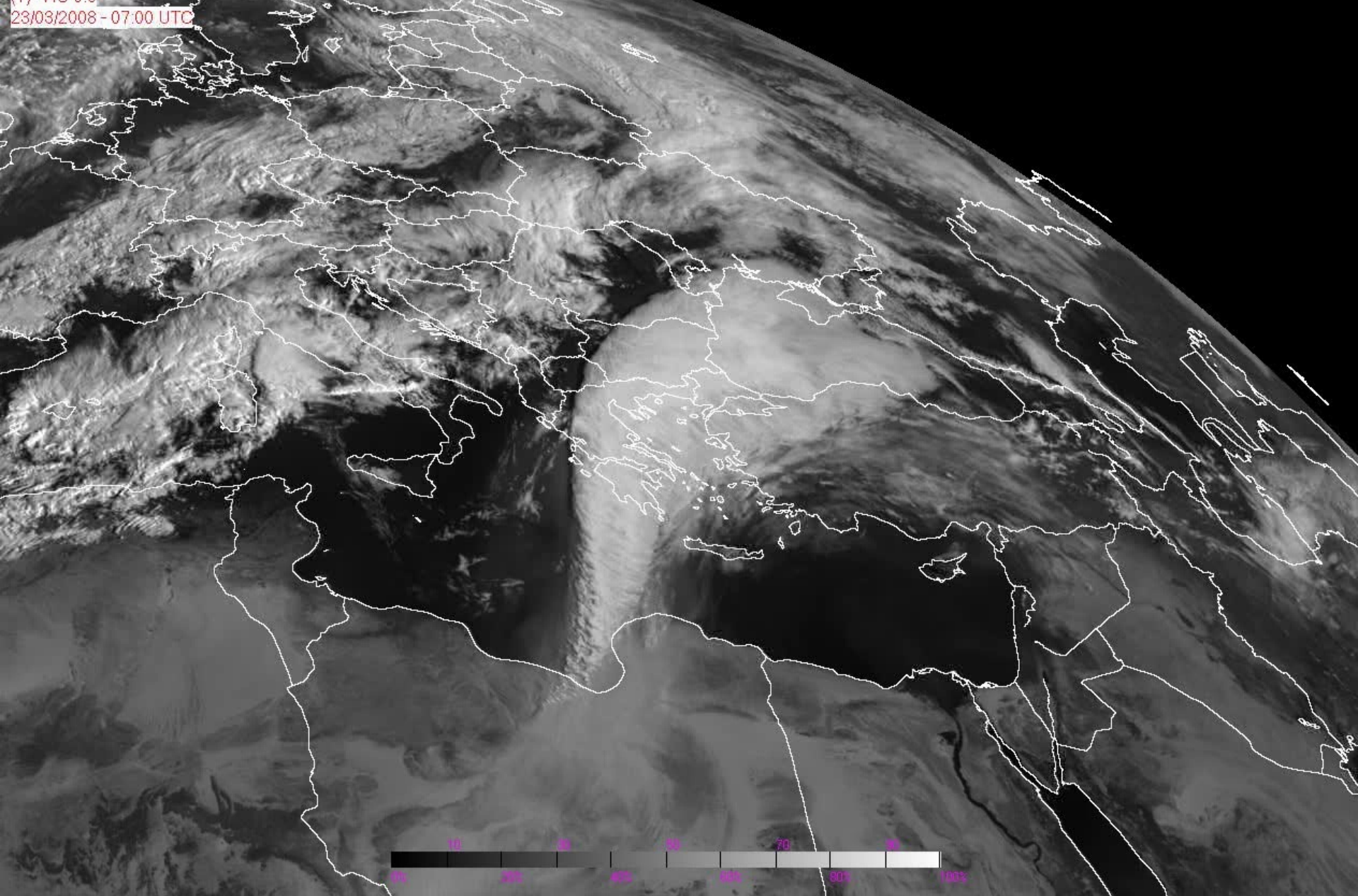


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23/03/2008 - 07:00 UTC

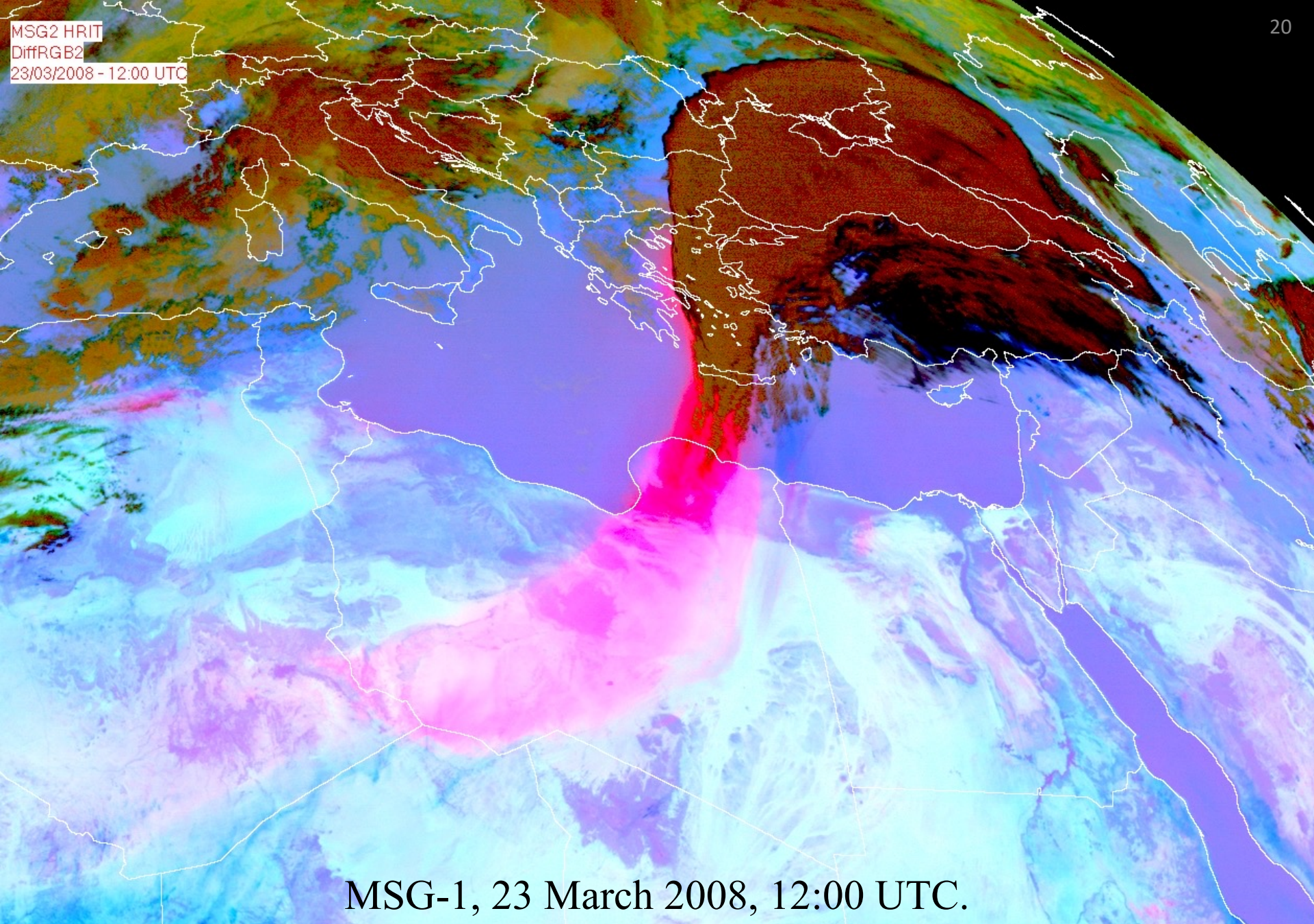


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MSG2 HRIT
DiffRGB2
23/03/2008 - 12:00 UTC



MSG-1, 23 March 2008, 12:00 UTC.

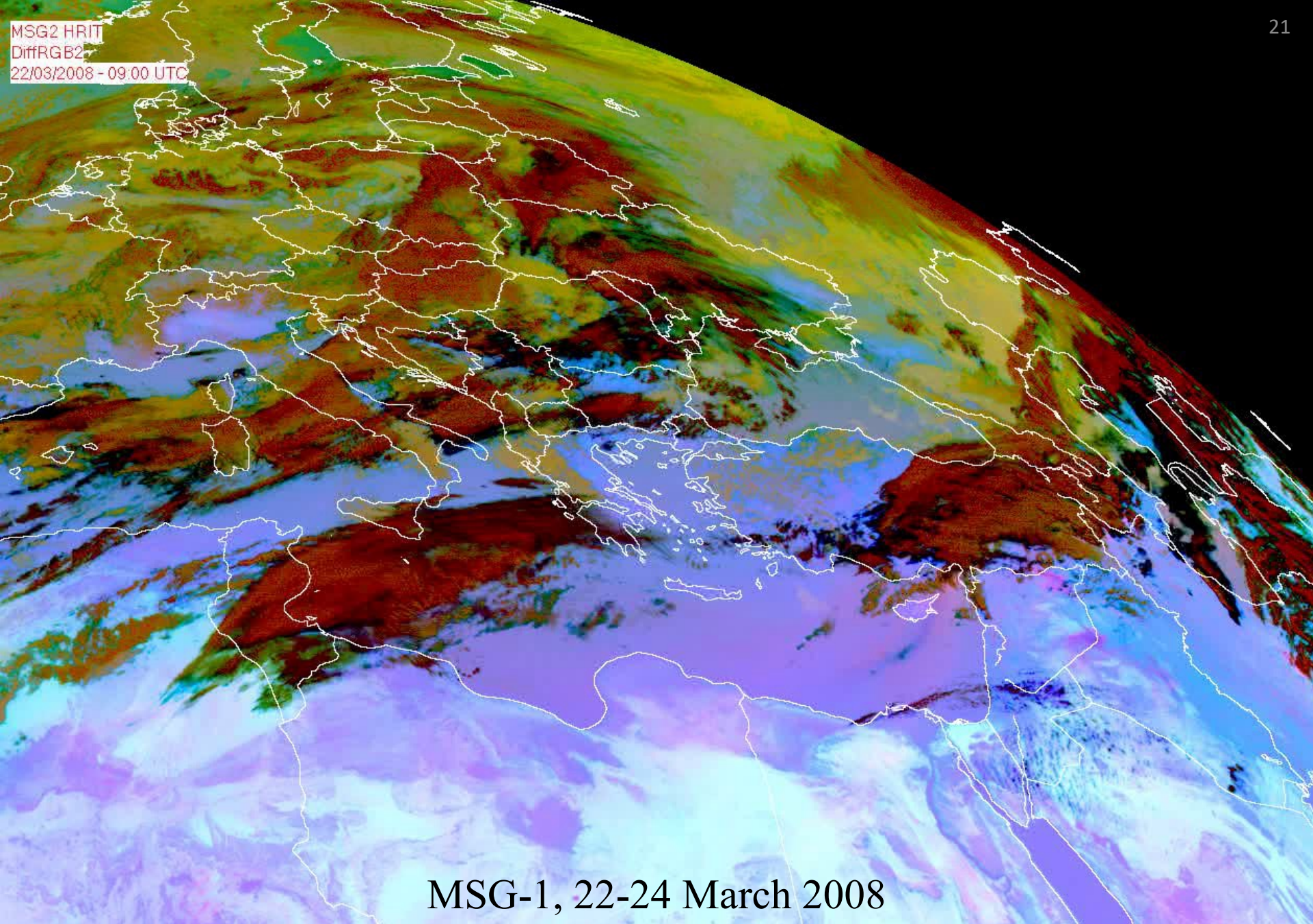


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 **EUMETSAT**

MSG2 HRIT
DiffRGB2
22/03/2008 - 09:00 UTC



MSG-1, 22-24 March 2008

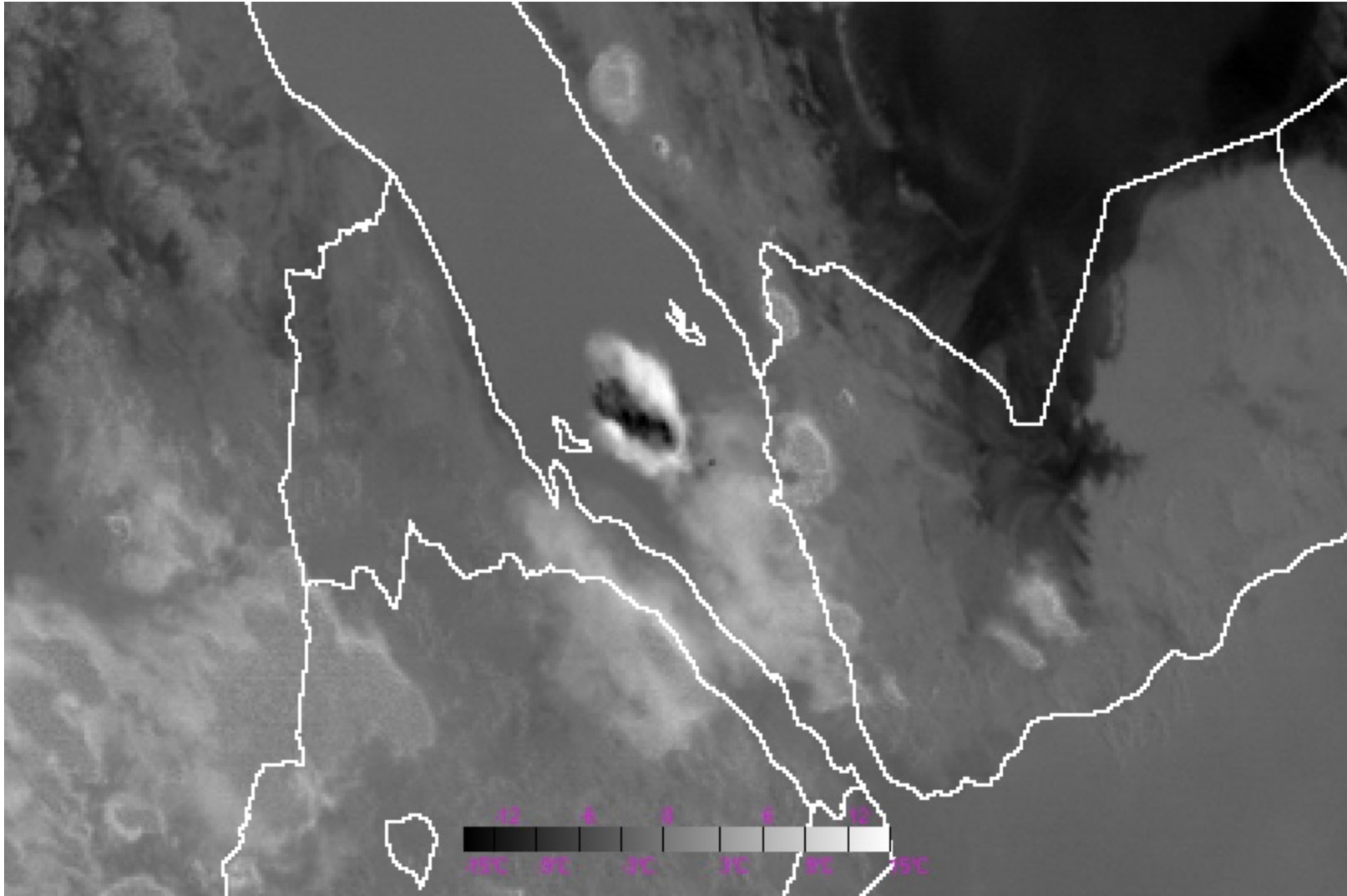


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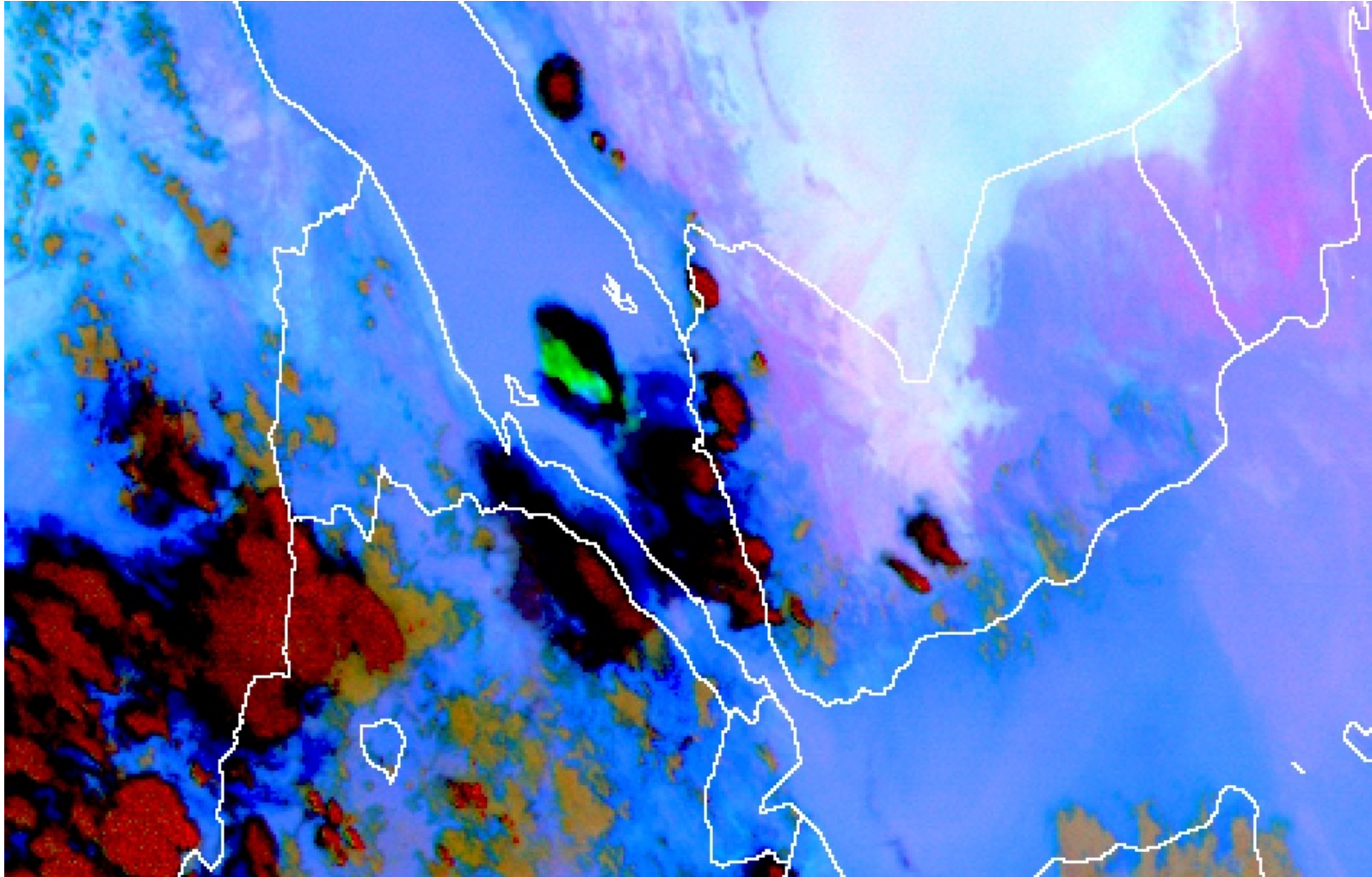
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SO₂ Plume - Channel Difference Application



SO₂ plume from Jebel at Tair. MSG-2, 30 September 2007, 15:00 UTC, channel difference between *IR8.7* ile *IR10.8* .

RGB 10-09, 09-07, 09 Example: SO₂



MSG-2, 30 September 2007, 15:00 UTC. SO₂ plume from Jebel at Tair.

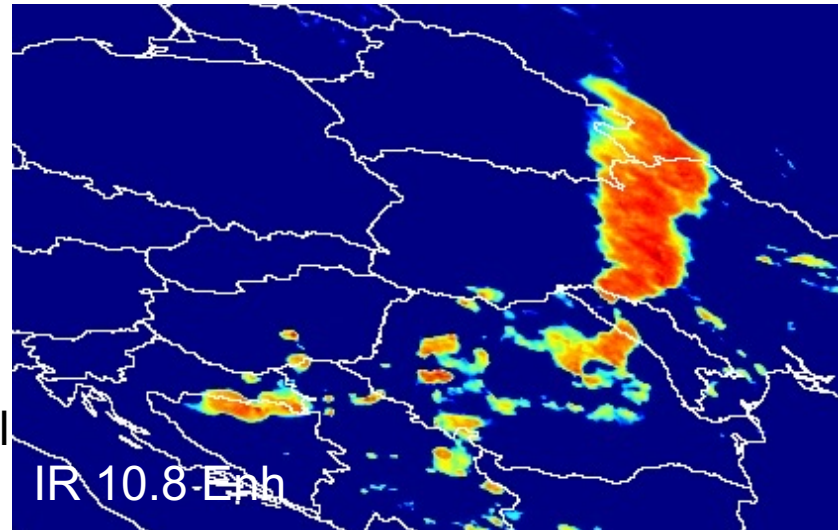
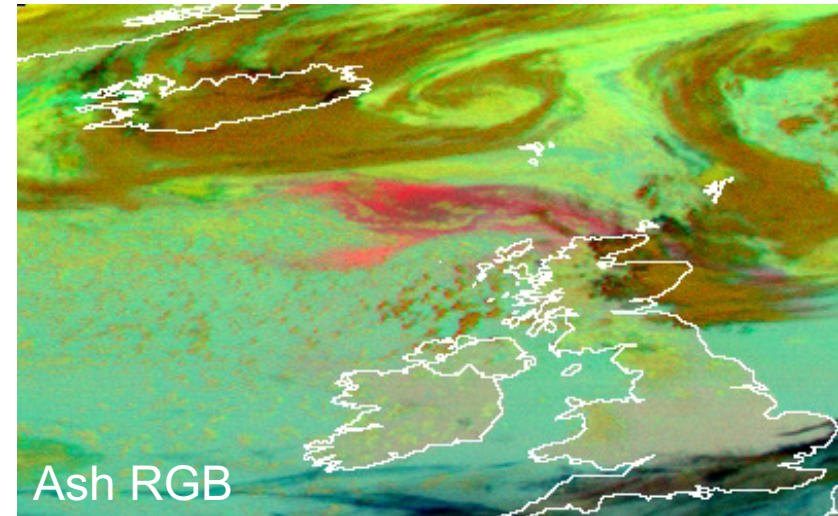
MSG2 HRIT
(12) HRVIS
31/05/2011 - 12:00 UTC

MSGView Software and its Specifications



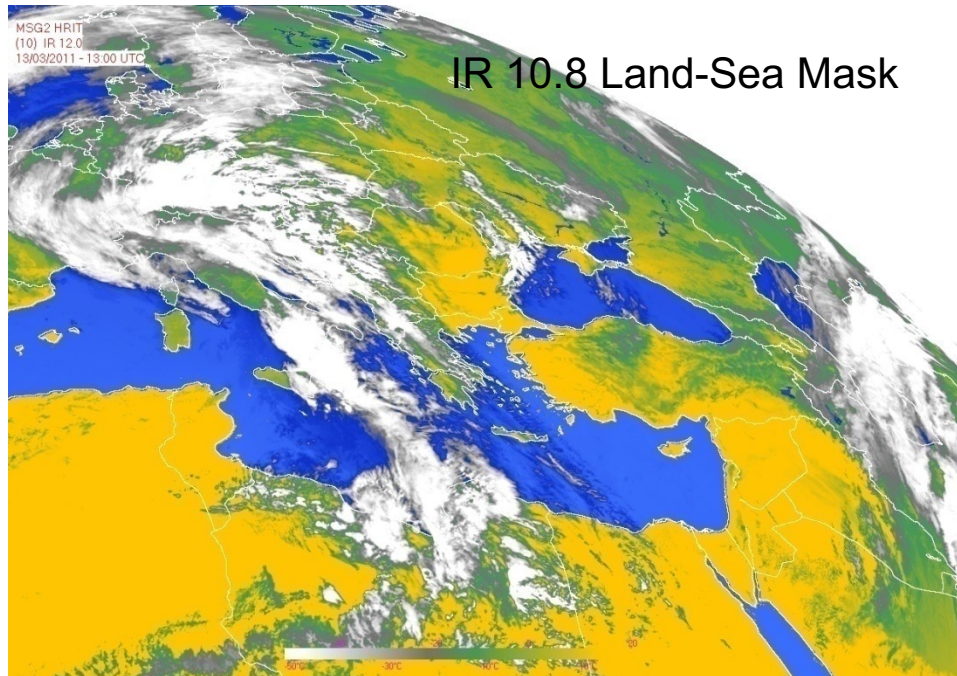
MSGView - Features

- Development
 - ✓ For MS Windows platform (XP, Vista, Win7)
 - ✓ Developed by using Borland CBuilder 6
 - ✓ Easy to install by setup file
 - ✓ No need powerful PC
 - ✓ User friendly interface
- Running at
 - Weather Forecast Center at TSMS HQ
 - ✓ 4 Regional Weather Forecast Center
 - ✓ ITU Met Engineering Division
 - ✓ EUMETSAT User Service (Trial Version)
 - ✓ More than 60 individual or Institutional users all over the World.
(i.e. Europe, South Africa, USA, China)



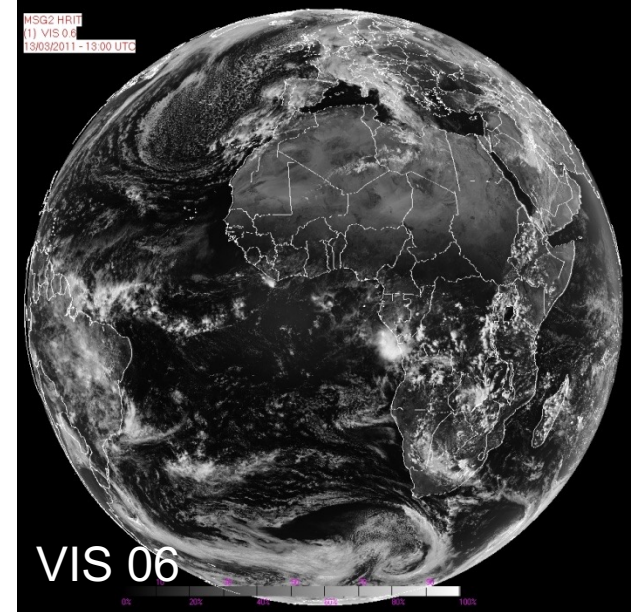
MSGView - Features

- Full Disk Display (1/4 downsizing)
 - ✓ Single Channel
 - ✓ RGB Composite
- Partial Display
 - ✓ Single Channel
 - ✓ Channel Difference
 - ✓ RGB Composite
 - ✓ Channel Difference RGB Composite



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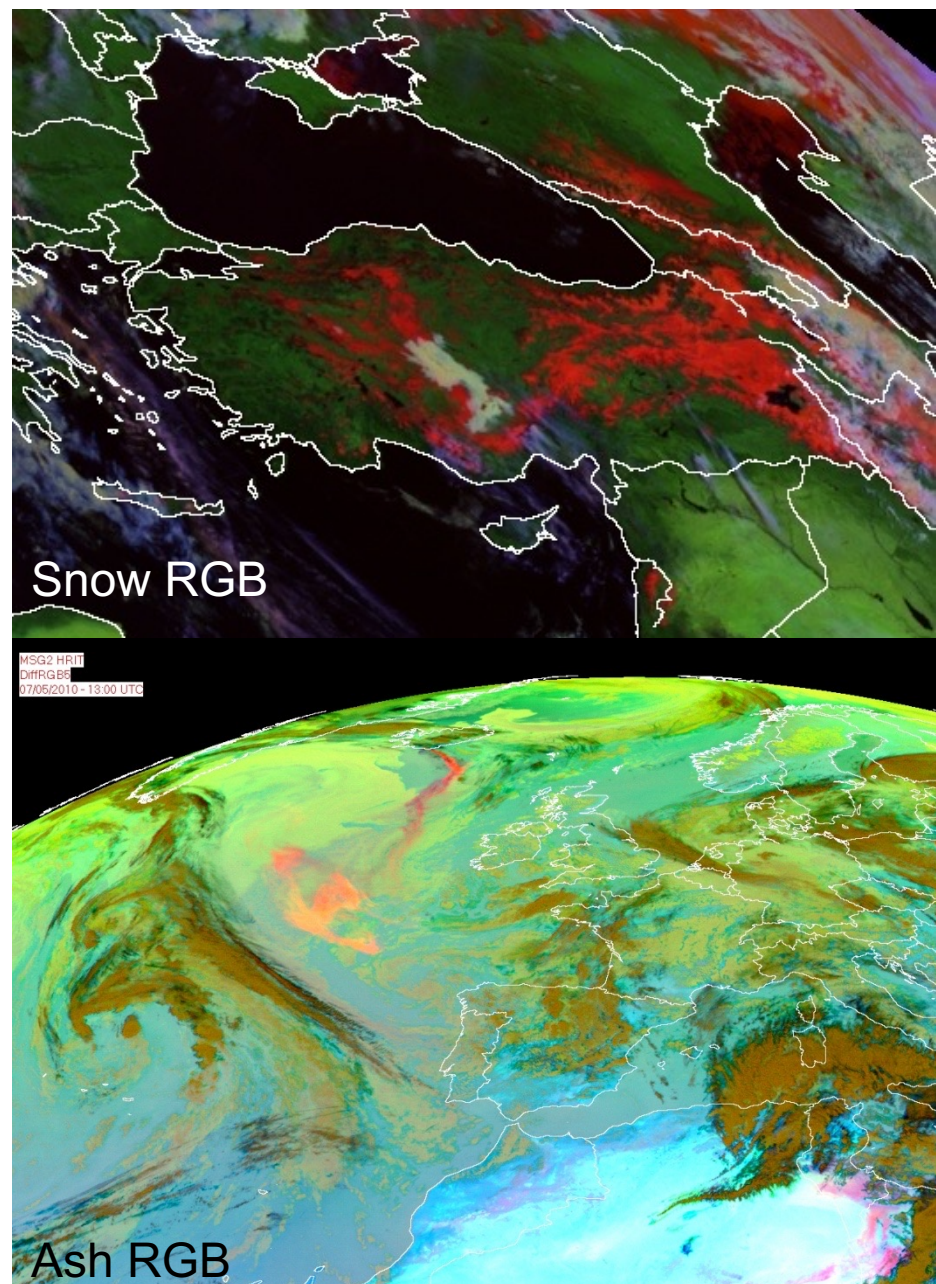
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- Single Channel Display
 - ✓ Gray Scale
 - ✓ LookUp Table (Customize)
 - ✓ Land/Sea Mask
 - ✓ Coast Lines
 - ✓ City Locations (Customize)
- Animation
 - ✓ Easy to make animation
 - ✓ Animation tools
 - ✓ Add latest image into image (optional)
 - ✓ Adjust animation speed
 - ✓ Create mpeg file

MSGView - Features

- More
 - ✓ Save image as JPEG
 - ✓ Check new data
 - ✓ Automatically display latest image (optional)
 - ✓ Specifications panels can be removed for wide display
 - ✓ Save image as physical value (Radiance, Reflectance or Brightness Temperature)
 - ✓ Display EUMETSAT U-MARF HDF5 formatted MSG data.
 - ✓ Animations can save as Mpeg file.
 - ✓ Single Channel Display with specific scale (*New*)
 - ✓ Volcanic Ash and Snow RGB (*New*)
 - ✓ MSG1 RSS Data Display (*New*)



Zoom and See Details

The screenshot displays the MSG Image Display software interface. The main window shows a satellite image of Europe with a zoomed-in view of the Mediterranean region. The zoomed-in view is labeled "Image Zoom (2X)". The main window also displays "MSG2 HRIT DiffRGB1" and "23/02/2010 - 08:45 UTC". The bottom left corner of the main window shows "Airmass RGB". The right sidebar contains various settings and file lists.

Specifications

- Channel: (1) VIS 0.6
- Lon: 25 Lat: 40
- RGB Channels: RGB 1 3 4, Diff 9 4, Diff RGB 5-6, 8-9, 5 (air masse)
- Color Tables: Color Default, Hist. Equalization, Contrast En., Land Sea Mask, Inverse

MSG Files

- 23
- MSG2_201002230645.H5
- MSG2_201002230700.H5
- MSG2_201002230715.H5
- MSG2_201002230730.H5
- MSG2_201002230745.H5
- MSG2_201002230800.H5
- MSG2_201002230815.H5
- MSG2_201002230830.H5
- MSG2_201002230845.H5

Animation Tools

- Clear Animation Directory
- Create Mpeg File

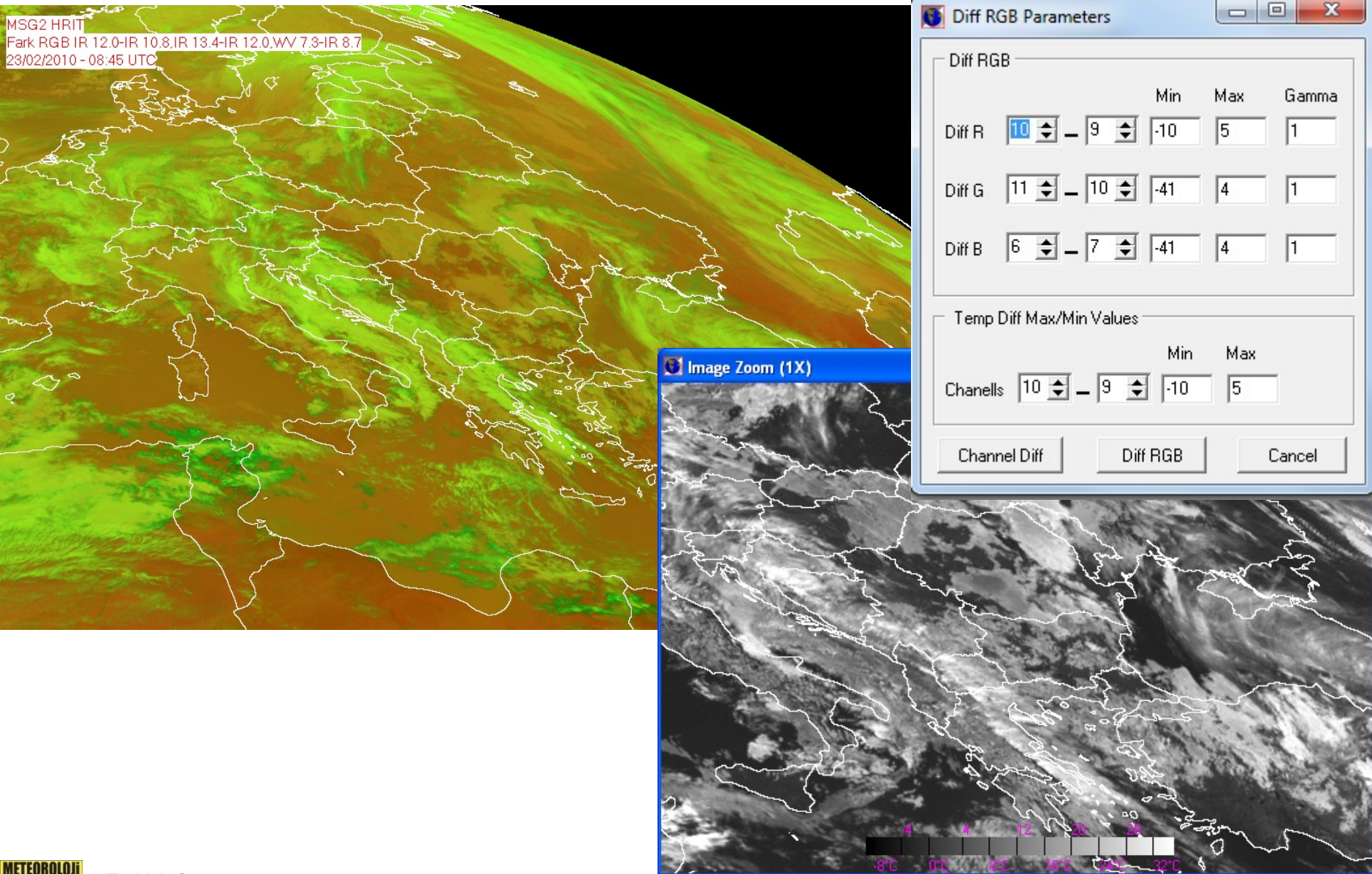
Overlay

- Coast Lines
- Scale
- Letterhead
- City Loc

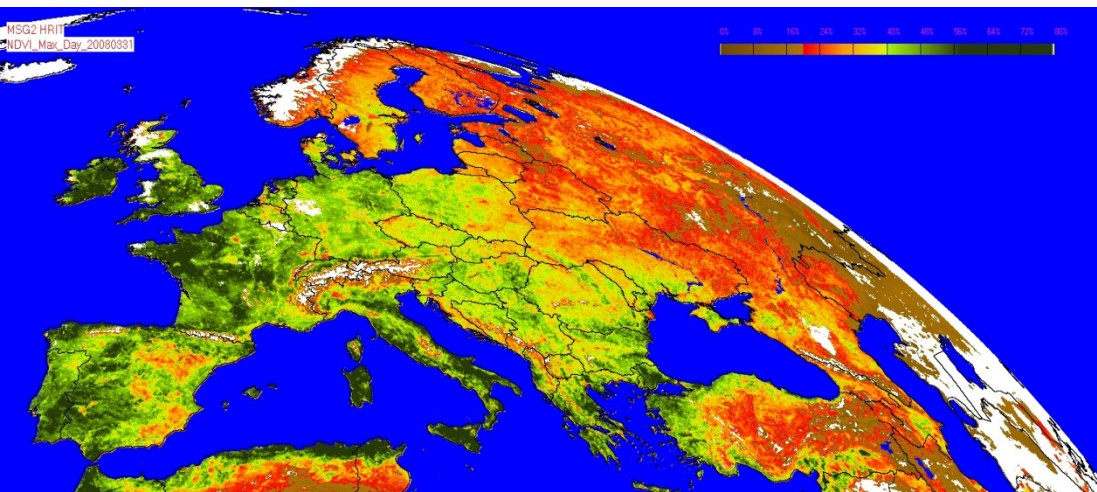
Selected Area

X1	Y1	X2	Y2
204	221	571	511

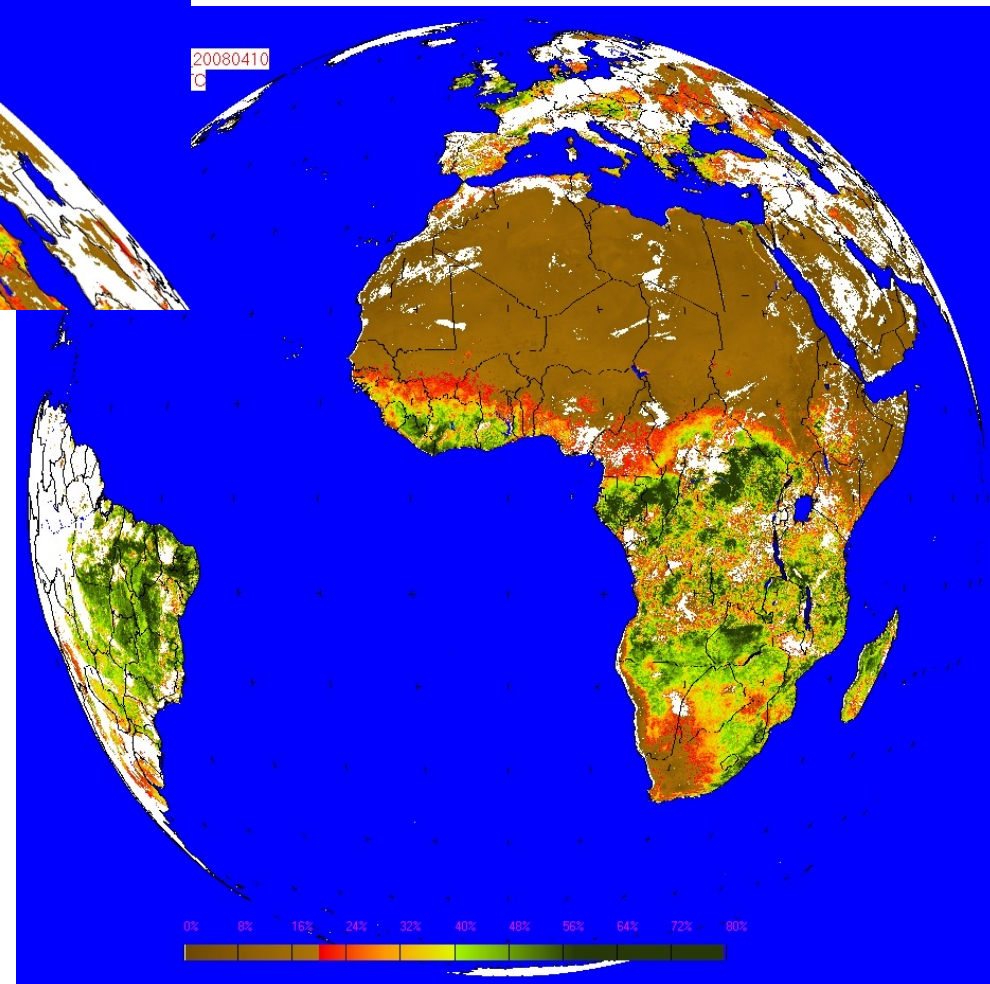
Make Your Own RGB's or Difference Images



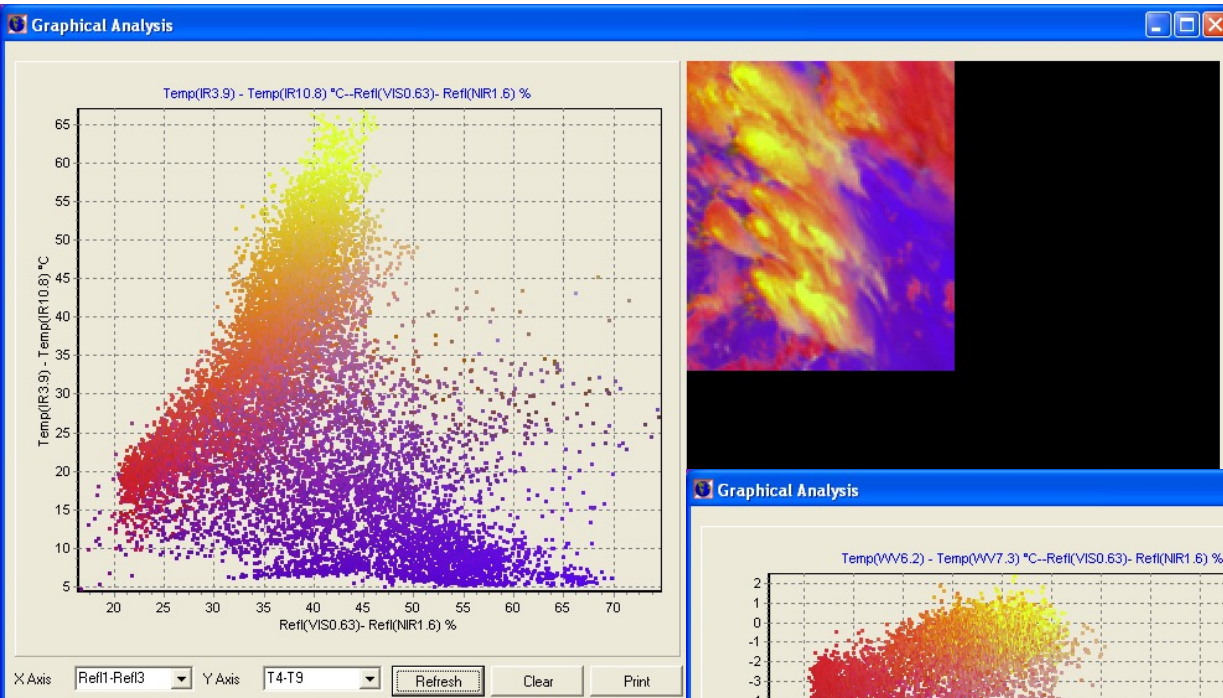
Create Daily Vegetation Index (NDVI)



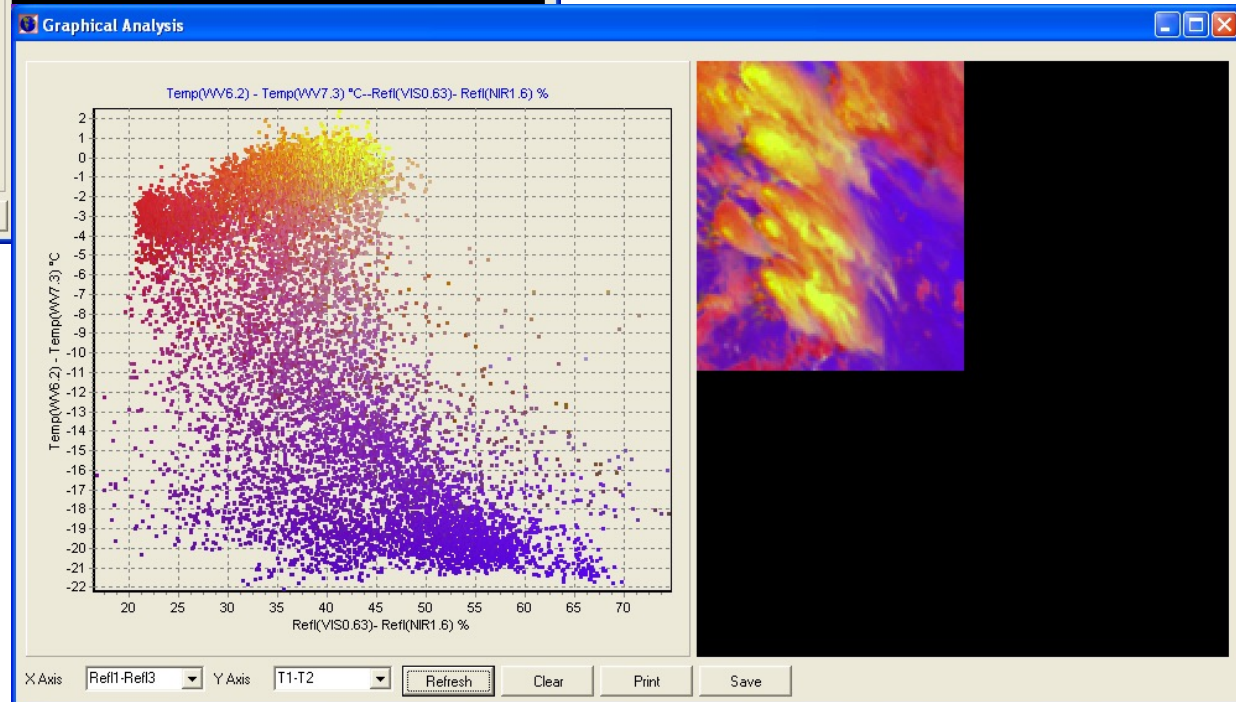
Daily MSG NDVI for full disk or selected area are possible to produce. Product is saved as HDF5 file format.



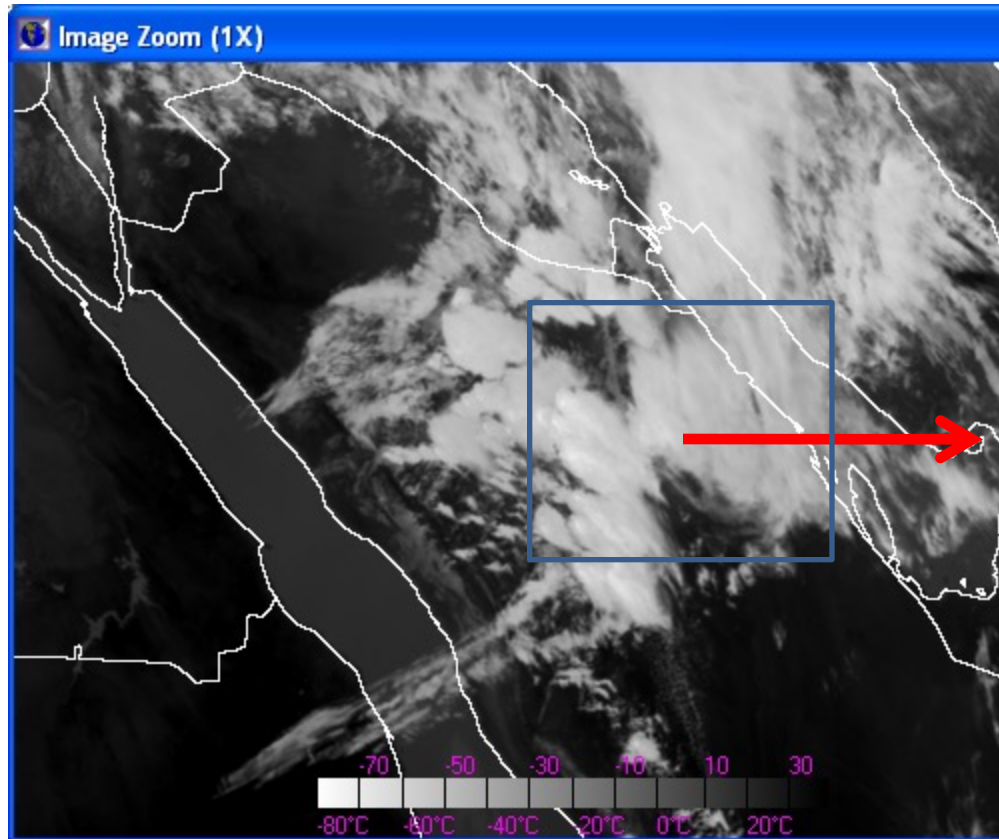
Scatter Plot Diagrams – To Analyze RGB Images



Scatter plot diagrams are available for the RGB composite image.



Save Image as Physical Values (BT or Reflectance)



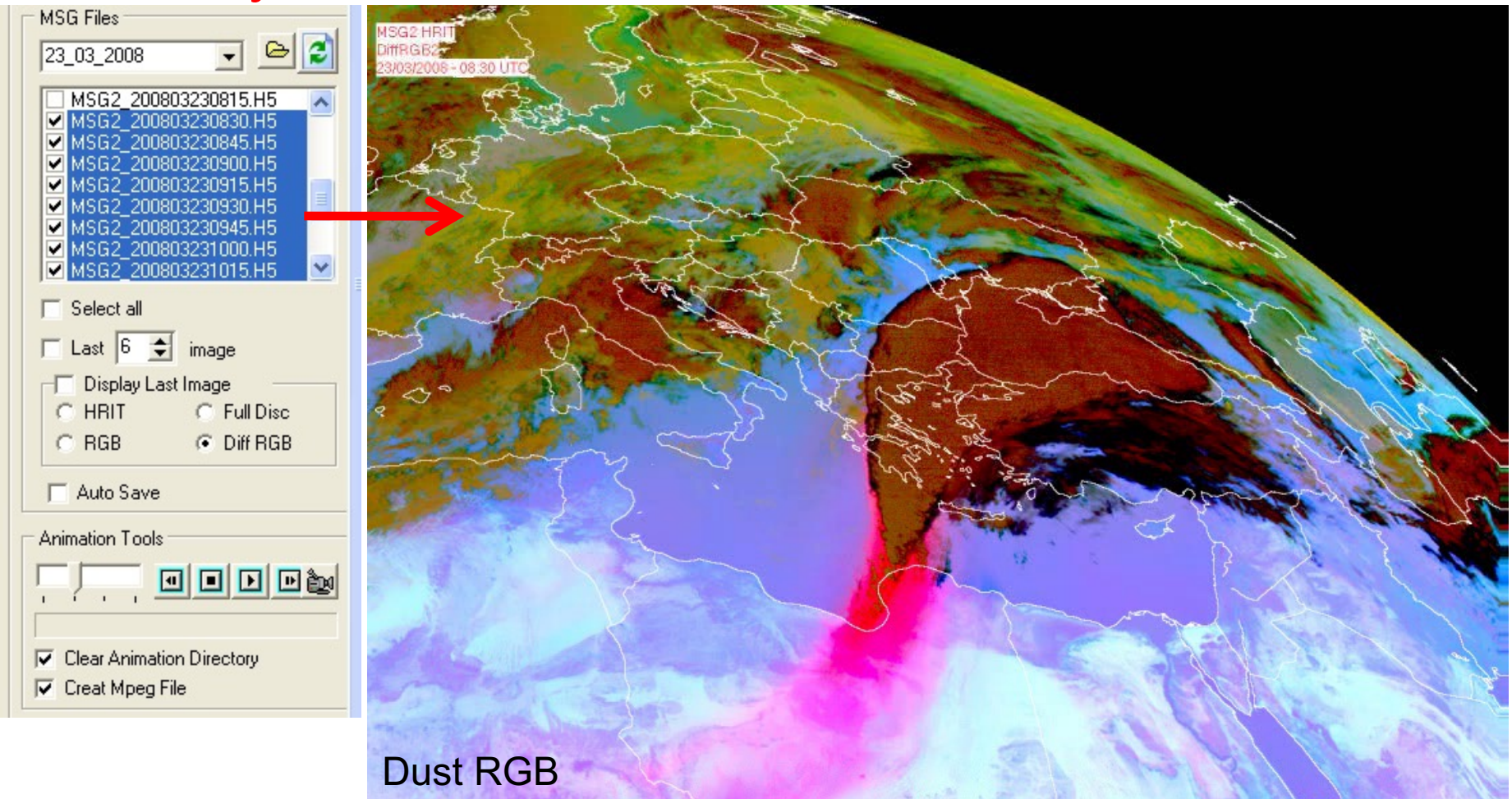
ir108 - Not Defteri

Dosya Düzen Biçim Görünüm Yardım

MSG Veri İşleme ve Görüntüleme Yazılımı, Aydın Ertürk, 2006
MSG 2 Kanal IR 10.8
// Saat: : UTC
X1=627 Y1=378 X2=754 Y2=520
Offset = -10.456758
Slope = 0.205034

Lat	Lon	BT (°K)
28.29	41.33	226.93
28.29	41.37	228.40
28.29	41.42	231.79
28.30	41.47	245.36
28.30	41.52	264.55
28.30	41.57	277.03
28.31	41.62	281.90
28.31	41.67	282.19
28.31	41.72	275.96
28.31	41.77	262.44
28.32	41.82	242.86
28.32	41.87	226.03
28.32	41.92	217.18
28.33	41.97	217.54
28.33	42.02	221.95
28.33	42.07	222.92
28.34	42.12	220.63
28.34	42.17	221.95
28.34	42.22	225.12
28.34	42.28	226.33
28.35	42.33	235.01
28.35	42.38	244.69
28.35	42.43	252.78
28.36	42.48	257.28
28.36	42.53	252.58
28.36	42.58	249.06
28.37	42.63	250.53
28.37	42.68	247.34
28.37	42.73	243.32
28.38	42.78	238.56
28.38	42.84	235.78
28.38	42.89	236.55
28.39	42.94	232.88
28.39	42.99	230.41
28.39	43.04	232.34
28.39	43.09	237.31
28.40	43.14	251.56
28.40	43.20	263.33
28.40	43.25	261.36
28.41	43.30	250.32
28.41	43.35	237.81
28.41	43.40	230.69

Select Cycles and Make Animation



The screenshot displays the MSGView software interface. On the left, the 'MSG Files' panel shows a list of files for the date '23_03_2008'. A red arrow points from the selected file 'MSG2_200803231015.H5' to the main image area. Below the file list are checkboxes for 'Select all', 'Last 6 image', 'Display Last Image', and 'Auto Save'. The 'Display Last Image' section has radio buttons for 'HRIT', 'Full Disc', 'RGB', and 'Diff RGB'. The 'Animation Tools' section includes playback controls and checkboxes for 'Clear Animation Directory' and 'Creat Mpeg File'. The main image area shows a satellite view of Africa with a color scale for dust concentration. A red arrow points from the 'MSG2_200803231015.H5' file in the list to the main image area. The image is labeled 'MSG2 HRIT DiffRGB' and '23/03/2008 - 08:30 UTC'. Below the image, the text 'Dust RGB' is displayed.

MSGView Software is free, if you would like to get a copy please send an e-mail to agerturk@dmi.gov.tr or look at the announcement at www.eumetsat.int or www.convection-wg.org web sites.