

Status of current DAWBEE Software

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Way from MSG towards MTG: MSGProc -> GEOProc

New channels -> new RGBs -> new satellite positions -> new input data formats → common processing interface

Everything in simple form for simple platforms (Windows, Linux), current status of software preparation:

Reading NetCDF input image data currently only under Linux platforms
(NetCDF libraries, FCI-decompression utilities are available)

Further processing on Windows/Linux:

- Calibration
- Extraction of sub regions
- Projections to base maps
- RGB – compositions

New features:

- Introduced new RGBs based on new NIR and VIS channels
- Introduced parallelization of calculation loops to speed up overall processing
- Generation of RGBs for more base-map domains in parallel
- Generation of RGBs for the same base-map from more satellites (dual satellite view)

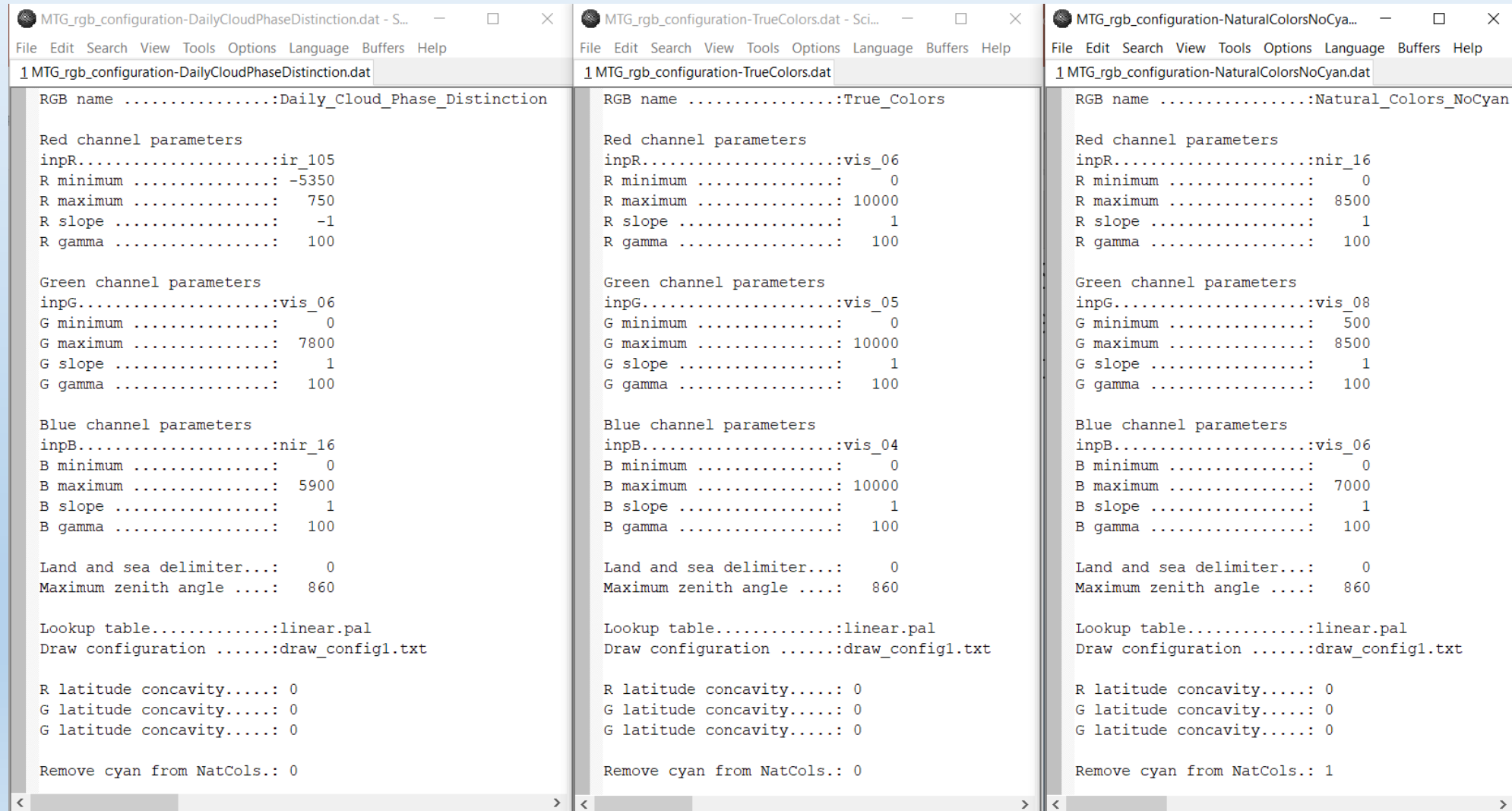
Way from MSG towards MTG: MSGProc -> GEOProc

New channels -> new RGBs = new RGB configurations:

d:\MTGProc.2\config\rgb*.*					d:\MTGProc.2\config\rgb*.*				
Meno	↑Ext	Vel'kost'	Dátum	Atr	Meno	↑Ext	Vel'kost'	Dátum	Atr
■ G17_rgb_configuration-24hMicrophysics	dat	1 340	25.12.2020 20:26	^	■ MTG_rgb_configuration-24hMicrophysics	dat	1 324	23.09.2020 08:53	^
■ G17_rgb_configuration-Airmass	dat	869	25.12.2020 10:47		■ MTG_rgb_configuration-Airmass	dat	1 218	24.09.2020 12:06	-
■ G17_rgb_configuration-CloudPhase	dat	865	27.12.2020 16:53		■ MTG_rgb_configuration-CloudTypes	dat	844	23.09.2020 08:53	-
■ G17_rgb_configuration-CloudTypes	dat	865	23.12.2020 19:56		■ MTG_rgb_configuration-Colorized_cold_cloud_tops	dat	866	23.09.2020 08:54	-
■ G17_rgb_configuration-DailyCloudPhaseDistinction	dat	883	27.12.2020 19:18		■ MTG_rgb_configuration-ConvectiveStorms	dat	871	23.09.2020 08:54	-
■ G17_rgb_configuration-DayMicrophysical	dat	884	28.12.2020 10:46		■ MTG_rgb_configuration-DailyCloudPhaseDistinction	dat	862	23.09.2020 08:54	-
■ G17_rgb_configuration-DaySolar	dat	876	28.12.2020 17:19		■ MTG_rgb_configuration-DayMicrophysical	dat	863	23.09.2020 08:54	-
■ G17_rgb_configuration-Dust	dat	1 328	28.12.2020 15:39		■ MTG_rgb_configuration-DaySolar	dat	855	23.09.2020 08:54	-
■ G17_rgb_configuration-FireTemperature	dat	870	25.12.2020 05:35		■ MTG_rgb_configuration-Dust	dat	1 315	23.09.2020 08:54	-
■ G17_rgb_configuration-NaturalColors	dat	868	30.11.2020 07:48		■ MTG_rgb_configuration-IR_105	dat	837	23.09.2020 08:54	-
■ G17_rgb_configuration-NaturalColorsWhite	dat	874	28.12.2020 17:00		■ MTG_rgb_configuration-IR_123	dat	838	23.09.2020 08:54	-
■ G17_rgb_configuration-NaturalTrueColors	dat	873	26.12.2020 15:59		■ MTG_rgb_configuration-IR_123-IR_105	dat	865	23.09.2020 08:54	-
■ G17_rgb_configuration-Night	dat	859	28.12.2020 15:39		■ MTG_rgb_configuration-IR-WV	dat	838	23.09.2020 08:55	-
■ G17_rgb_configuration-NightLowClouds	dat	878	28.12.2020 15:39		■ MTG_rgb_configuration-NaturalColors	dat	877	11.10.2020 15:12	-
■ G17_rgb_configuration-NightMicrophysical	dat	882	28.12.2020 15:19		■ MTG_rgb_configuration-NaturalColorsNoCyan	dat	884	11.10.2020 15:12	-
■ G17_rgb_configuration-VIS-IR	dat	860	28.12.2020 15:19		■ MTG_rgb_configuration-Night	dat	838	23.09.2020 08:55	-
■ G17_rgb_configuration-VolcanicAsh	dat	1 336	28.12.2020 12:07		■ MTG_rgb_configuration-NightLowClouds	dat	863	23.09.2020 08:55	-
■ MTG_rgb_configuration-24hMicrophysics	dat	1 324	23.09.2020 08:53		■ MTG_rgb_configuration-NightMicrophysical	dat	866	23.09.2020 08:55	-
■ MTG_rgb_configuration-Airmass	dat	1 218	24.09.2020 12:06		■ MTG_rgb_configuration-SunHeight	dat	842	23.09.2020 08:55	-
■ MTG_rgb_configuration-CloudTypes	dat	844	23.09.2020 08:53		■ MTG_rgb_configuration-TrueColors	dat	844	23.09.2020 08:55	-
■ MTG_rgb_configuration-Colorized_cold_cloud_tops	dat	866	23.09.2020 08:54		■ MTG_rgb_configuration-VIS-IR	dat	839	23.09.2020 08:55	-
■ MTG_rgb_configuration-ConvectiveStorms	dat	871	23.09.2020 08:54		■ MTG_rgb_configuration-VolcanicAsh	dat	1 321	23.09.2020 08:55	-
■ MTG_rgb_configuration-DailyCloudPhaseDistinction	dat	862	23.09.2020 08:54		■ MTG_rgb_configuration-WV6.3-enhanced	dat	847	23.09.2020 08:56	-
■ MTG_rgb_configuration-DayMicrophysical	dat	863	23.09.2020 08:54	▼					▼
0 kB / 52 kB v 0 / 57 súboroch					0 kB / 52 kB v 0 / 57 súboroch				

Way from MSG towards MTG: MSGProc -> GEOProc

New channels -> new RGBs = new RGB configurations:



```
MTG_rgb_configuration-DailyCloudPhaseDistinction.dat - S...
File Edit Search View Tools Options Language Buffers Help
1 MTG_rgb_configuration-DailyCloudPhaseDistinction.dat

RGB name .....:Daily_Cloud_Phase_Distinction

Red channel parameters
inpR.....:ir_105
R minimum .....: -5350
R maximum .....: 750
R slope .....: -1
R gamma .....: 100

Green channel parameters
inpG.....:vis_06
G minimum .....: 0
G maximum .....: 7800
G slope .....: 1
G gamma .....: 100

Blue channel parameters
inpB.....:nir_16
B minimum .....: 0
B maximum .....: 5900
B slope .....: 1
B gamma .....: 100

Land and sea delimiter...: 0
Maximum zenith angle ....: 860

Lookup table.....:linear.pal
Draw configuration .....:draw_config1.txt

R latitude concavity.....: 0
G latitude concavity.....: 0
G latitude concavity.....: 0

Remove cyan from NatCols.: 0

MTG_rgb_configuration-TrueColors.dat - Sci...
File Edit Search View Tools Options Language Buffers Help
1 MTG_rgb_configuration-TrueColors.dat

RGB name .....:True_Colors

Red channel parameters
inpR.....:vis_06
R minimum .....: 0
R maximum .....: 10000
R slope .....: 1
R gamma .....: 100

Green channel parameters
inpG.....:vis_05
G minimum .....: 0
G maximum .....: 10000
G slope .....: 1
G gamma .....: 100

Blue channel parameters
inpB.....:vis_04
B minimum .....: 0
B maximum .....: 10000
B slope .....: 1
B gamma .....: 100

Land and sea delimiter...: 0
Maximum zenith angle ....: 860

Lookup table.....:linear.pal
Draw configuration .....:draw_config1.txt

R latitude concavity.....: 0
G latitude concavity.....: 0
G latitude concavity.....: 0

Remove cyan from NatCols.: 0

MTG_rgb_configuration-NaturalColorsNoCyan...
File Edit Search View Tools Options Language Buffers Help
1 MTG_rgb_configuration-NaturalColorsNoCyan.dat

RGB name .....:Natural_Colors_NoCyan

Red channel parameters
inpR.....:nir_16
R minimum .....: 0
R maximum .....: 8500
R slope .....: 1
R gamma .....: 100

Green channel parameters
inpG.....:vis_08
G minimum .....: 500
G maximum .....: 8500
G slope .....: 1
G gamma .....: 100

Blue channel parameters
inpB.....:vis_06
B minimum .....: 0
B maximum .....: 7000
B slope .....: 1
B gamma .....: 100

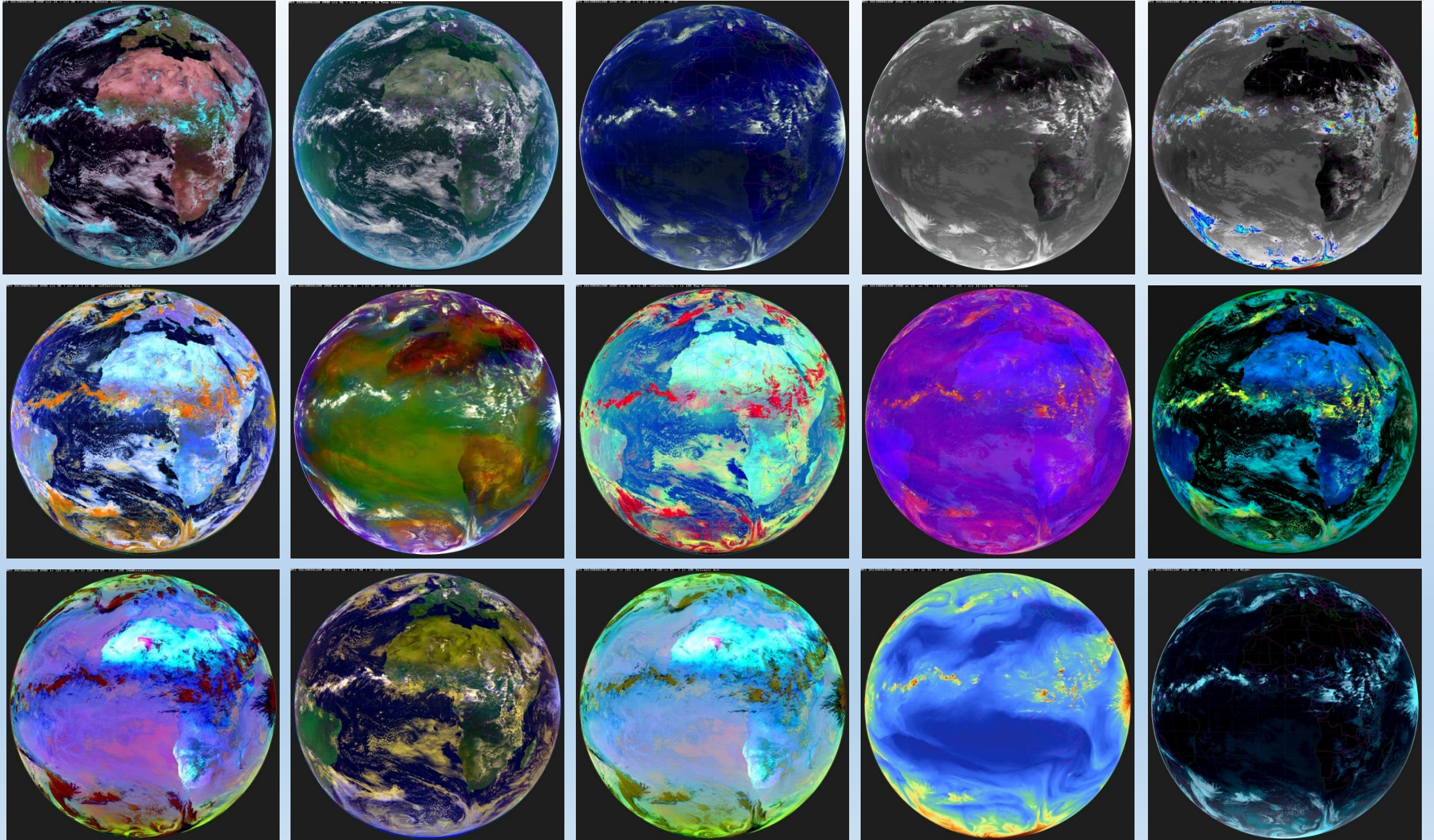
Land and sea delimiter...: 0
Maximum zenith angle ....: 860

Lookup table.....:linear.pal
Draw configuration .....:draw_config1.txt

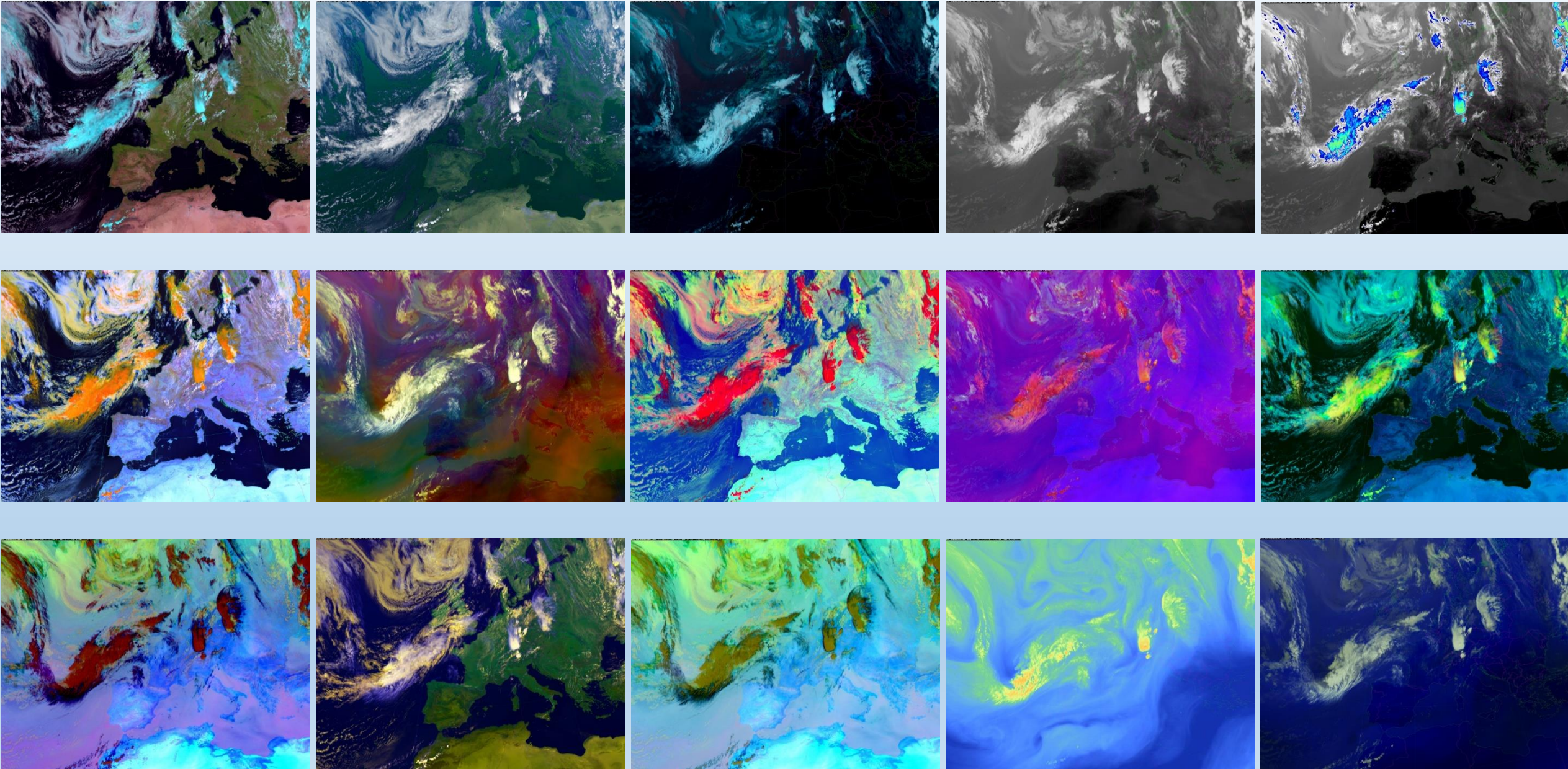
R latitude concavity.....: 0
G latitude concavity.....: 0
G latitude concavity.....: 0

Remove cyan from NatCols.: 1
```

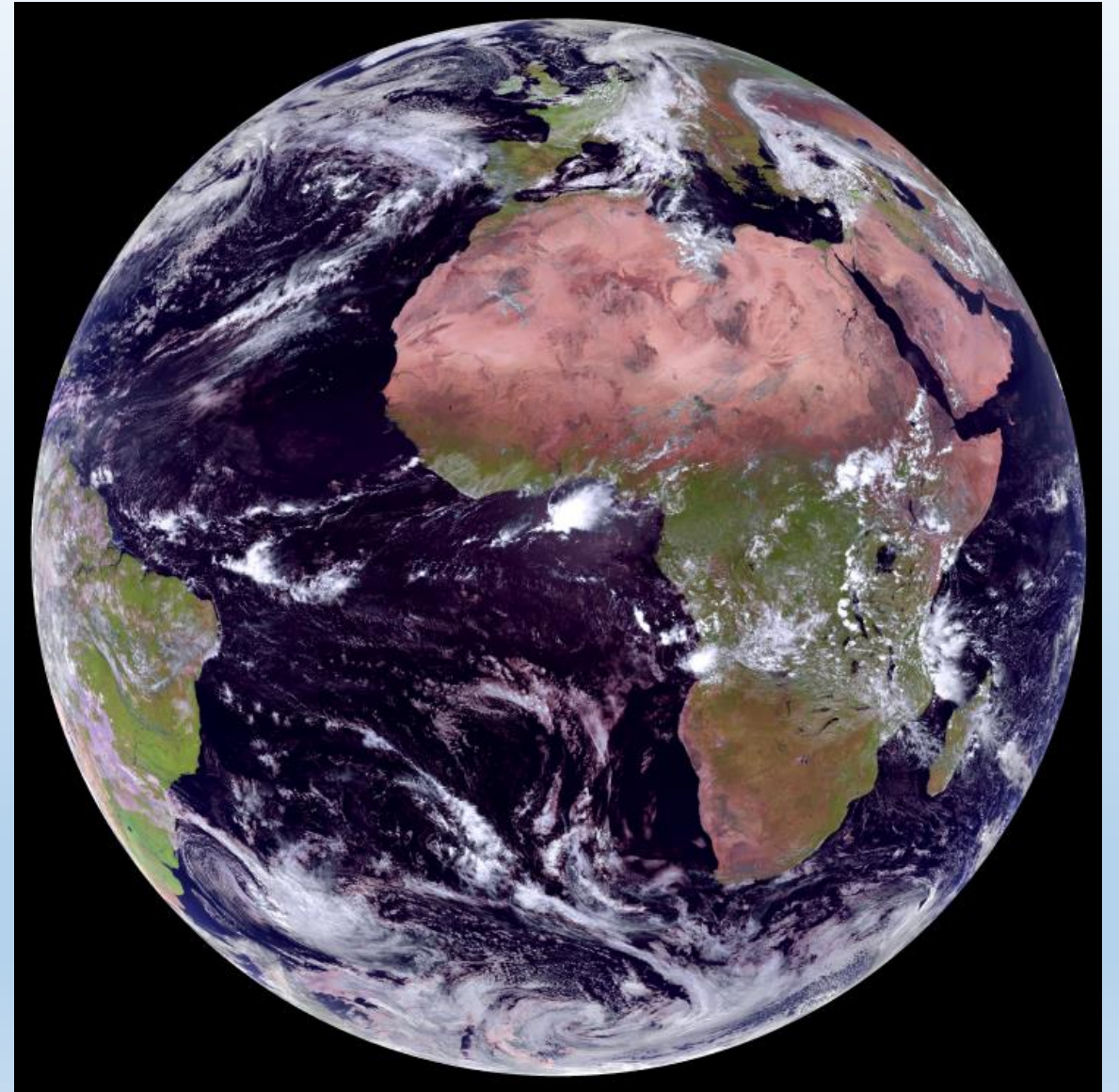
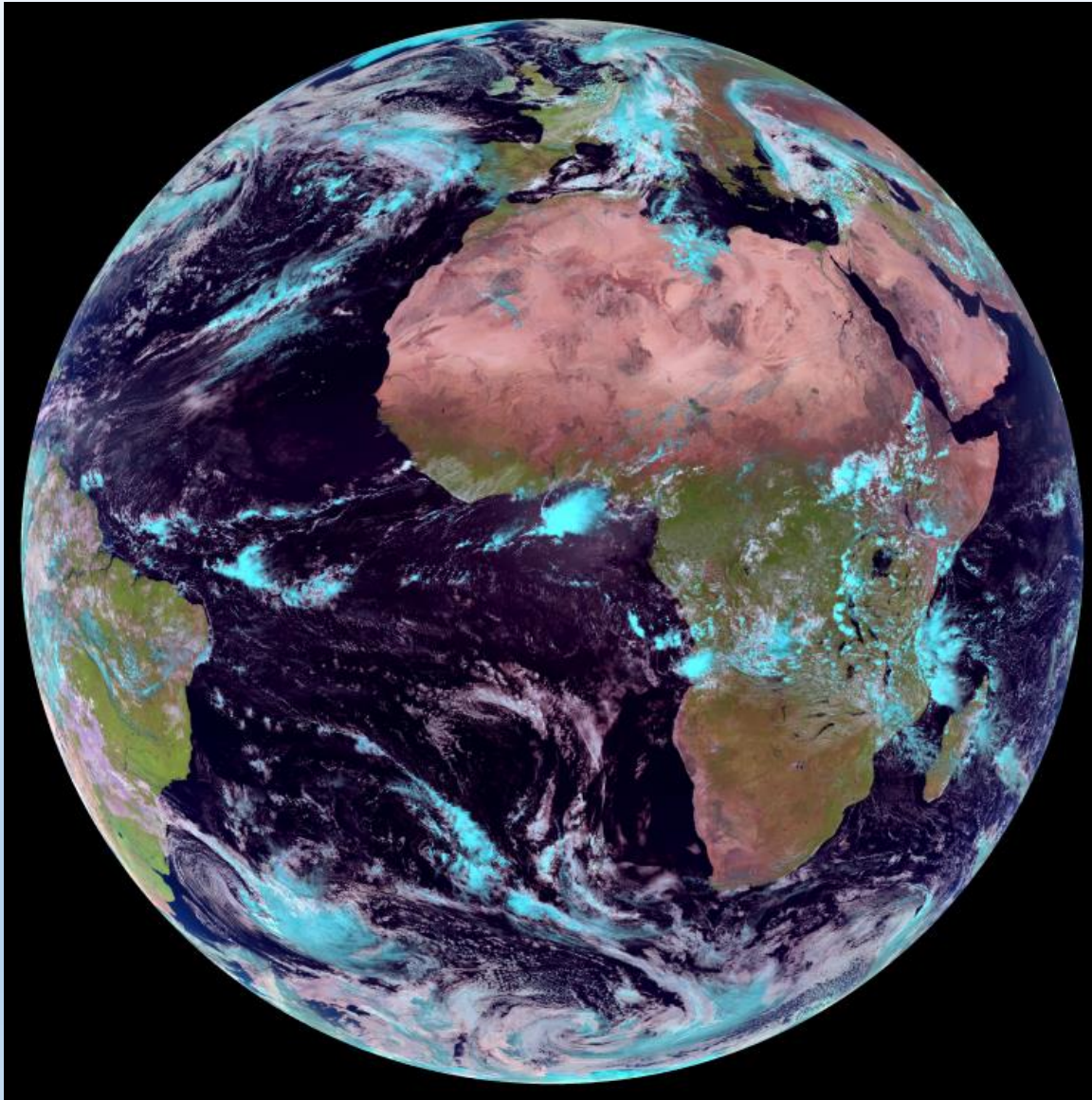

MTG test data 4th August 2013 12:00UTC processed to RGBs by GEOProc



MTG test data 4th August 2013 12:00UTC processed to RGBs by GEOProc

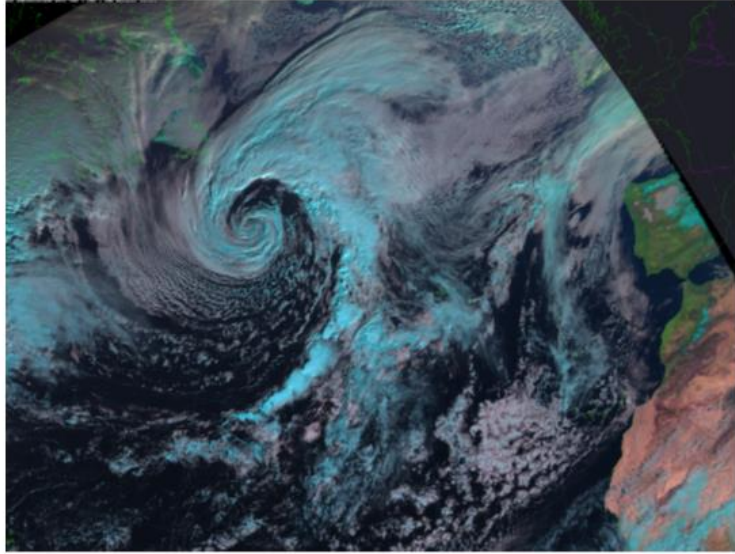


Case Natural Colors and new version “Natural White Clouds” 12th April 2021:

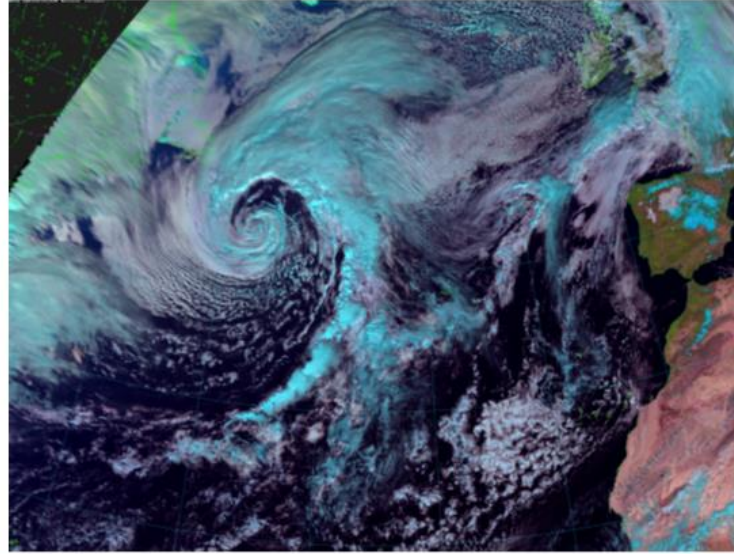


CASE GOES16-MSG4 2021-01-16 13:00 – Example of dual satellite view – 3D stereoscopic images:

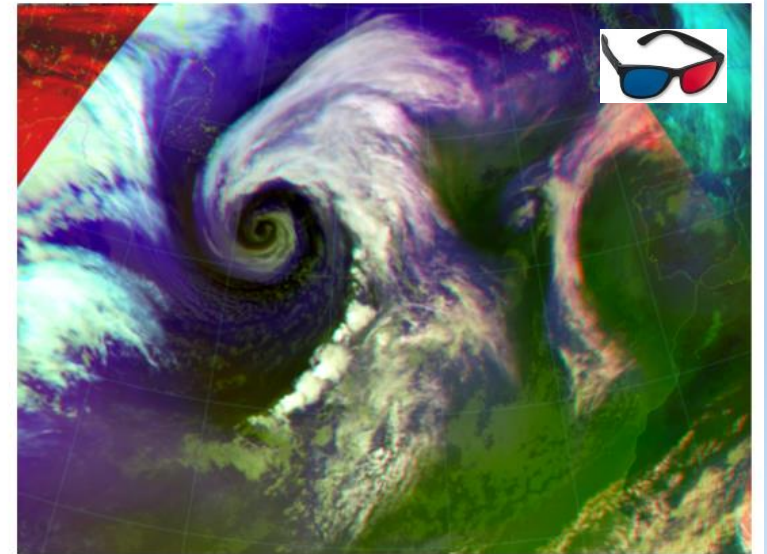
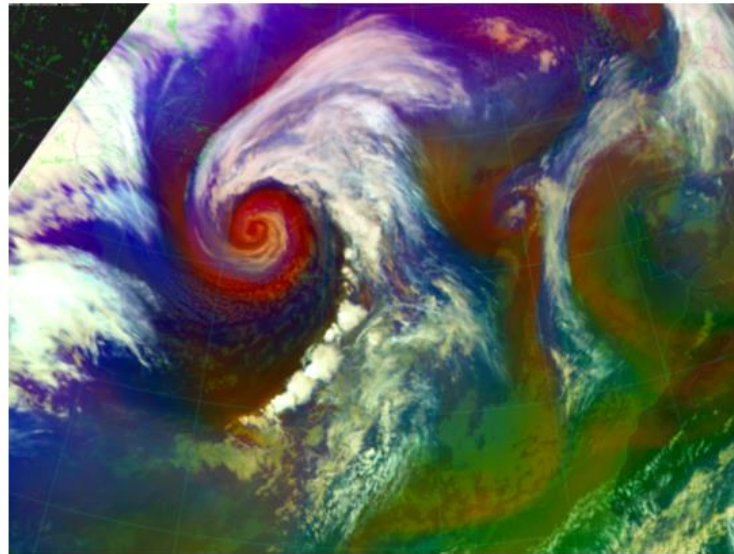
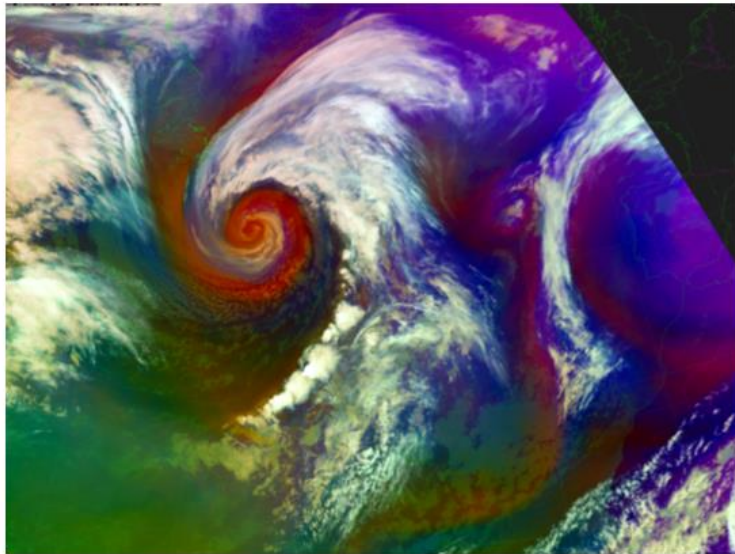
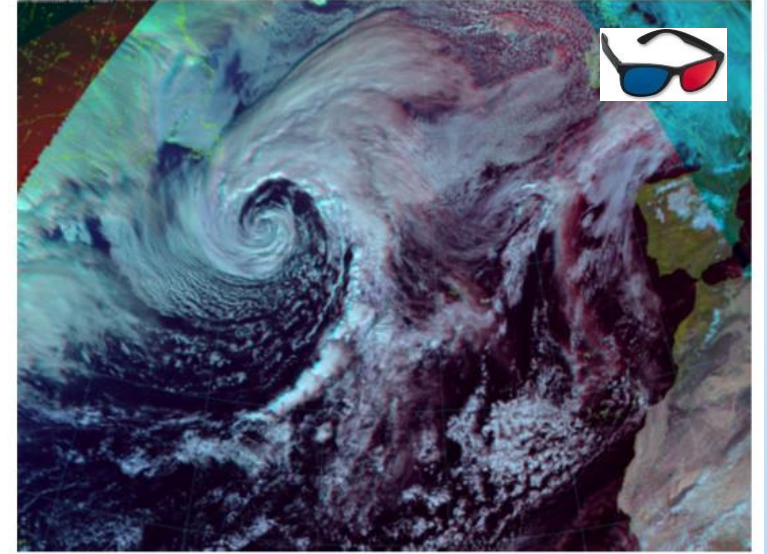
Left:



Right:



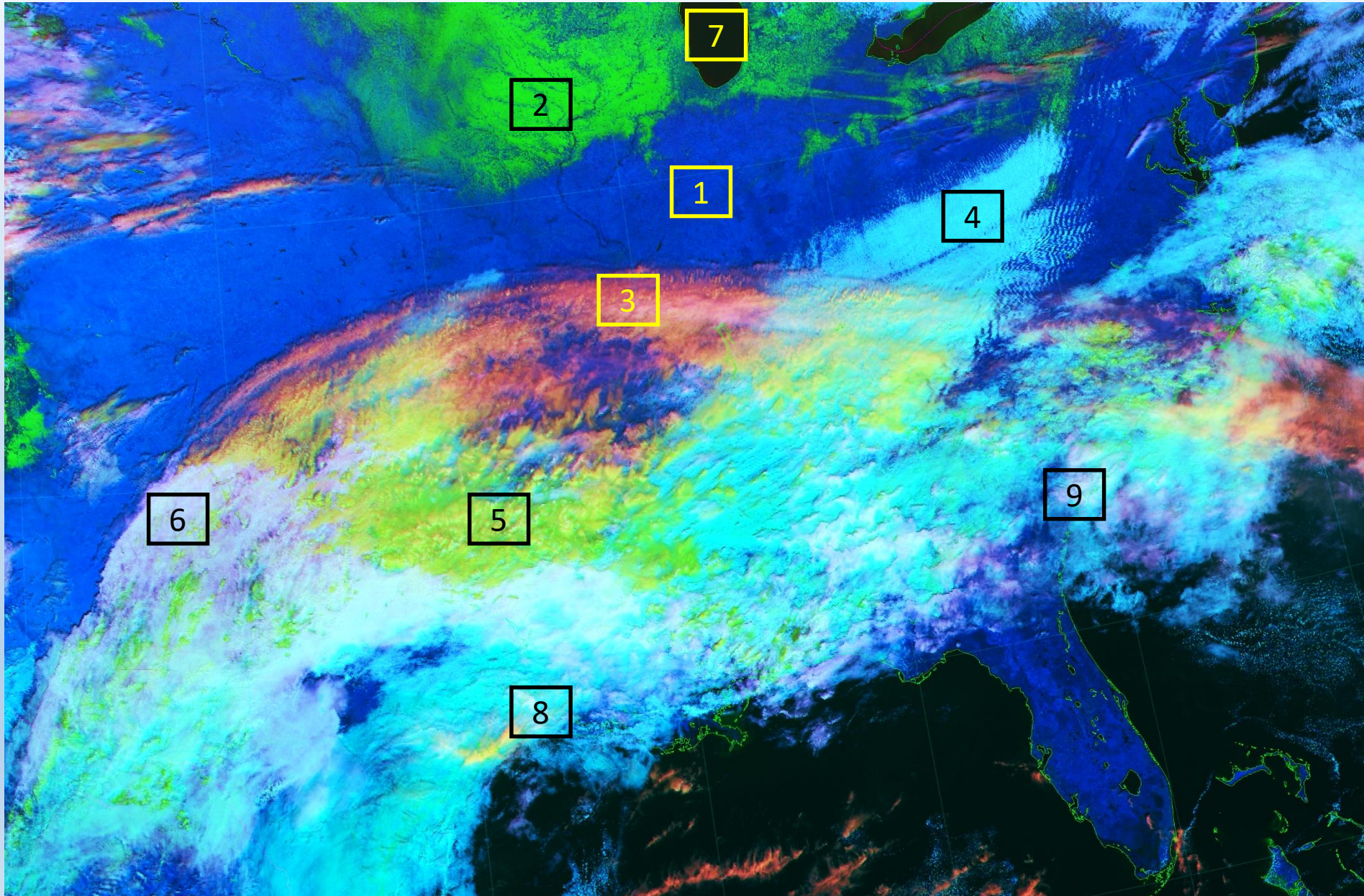
3D view:



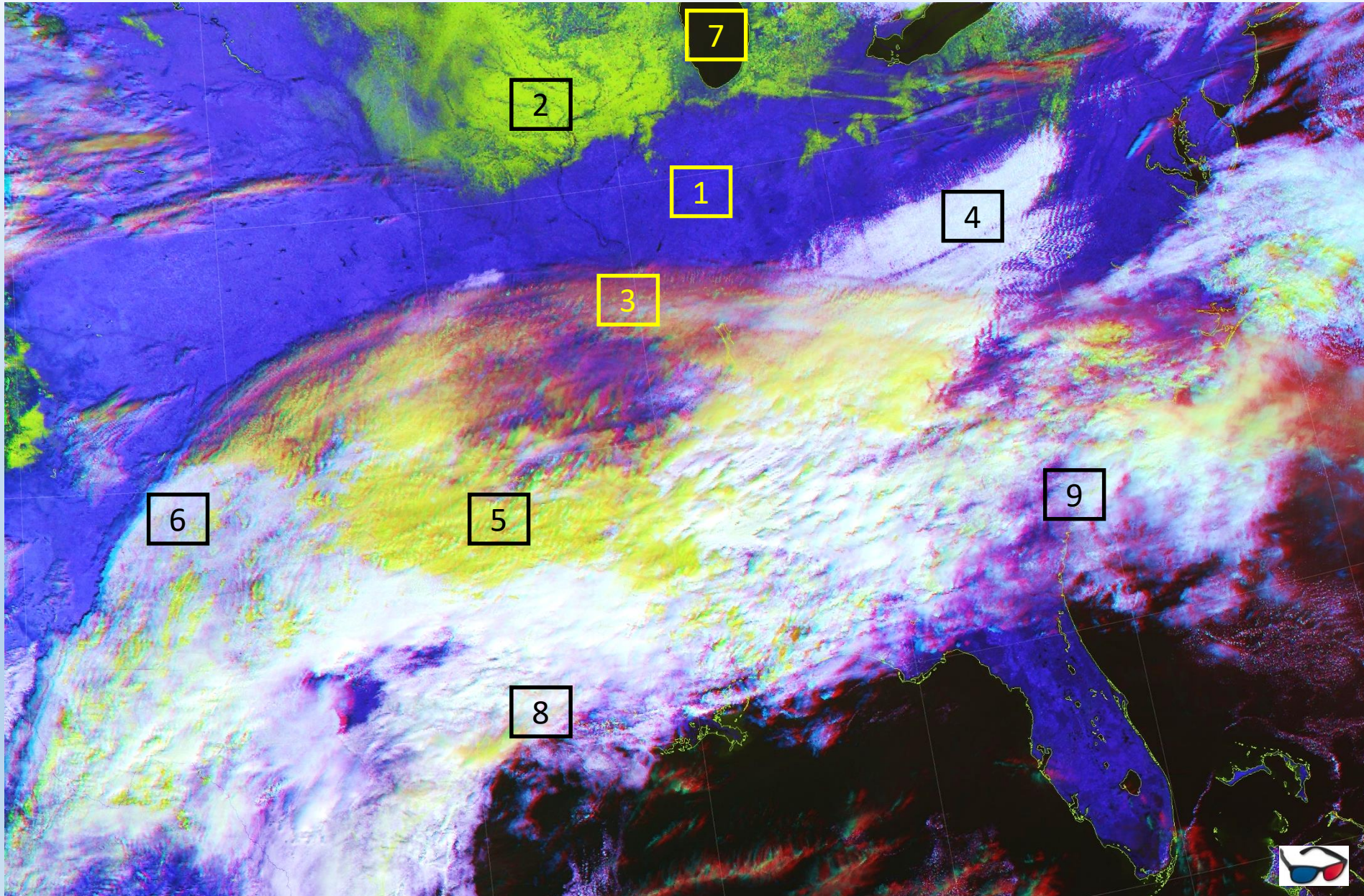
CASE 2021-01-21 17:00 Cloud phase distinction over land surface:

GOES-16 Standard RGB:

Will be new RGB from MTG FCI imager!!!



CASE 2021-01-21 17:00 Cloud phase distinction over land surface: G16-G17 Anaglyph:

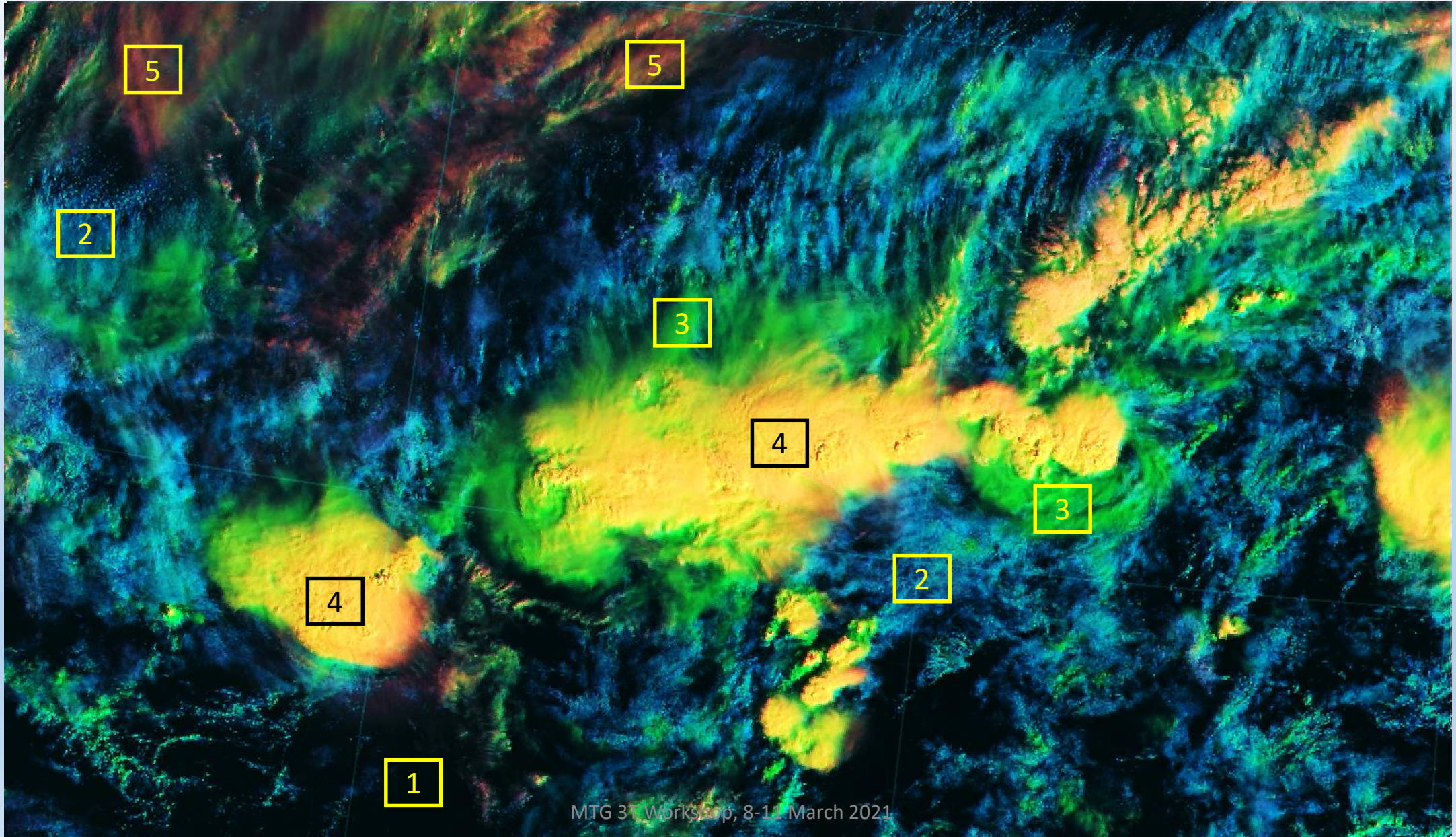


CASE 2021-01-21 17:00 Cloud phase distinction over land surface:

Legend:

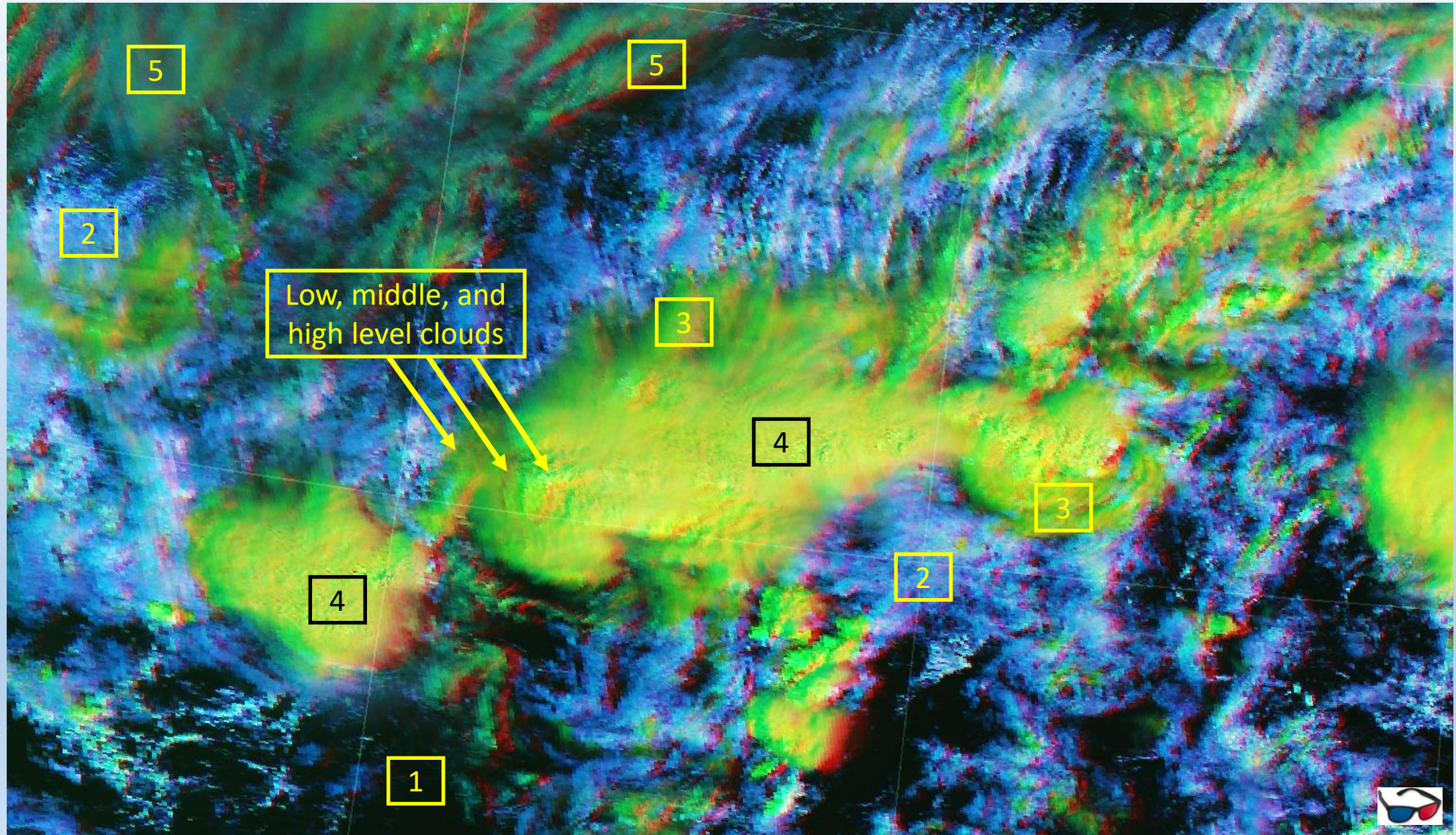
1	Land surface
2	Land surface covered by snow
3	Thin high-level clouds with ice particles
4	Low level clouds
5	Glaciating clouds
6	Thin mid level clouds with water droplets
7	Water surface
8	Thick high level clouds with ice particles
9	Thin mid level clouds with water droplets

CASE 2021-01-25 17:00 Cloud phase & Cloud types & phase distinction: GOES-17 Standard RGB Storms details:



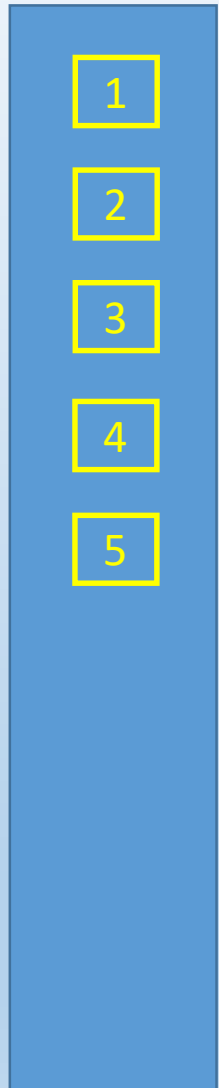
CASE 2021-01-25 17:00 Cloud phase & Cloud types & phase distinction:

GOES-16-GOES-17 Anaglyph RGB storms details:



CASE 2021-01-25 17:00 Cloud phase & Cloud types & phase distinction:

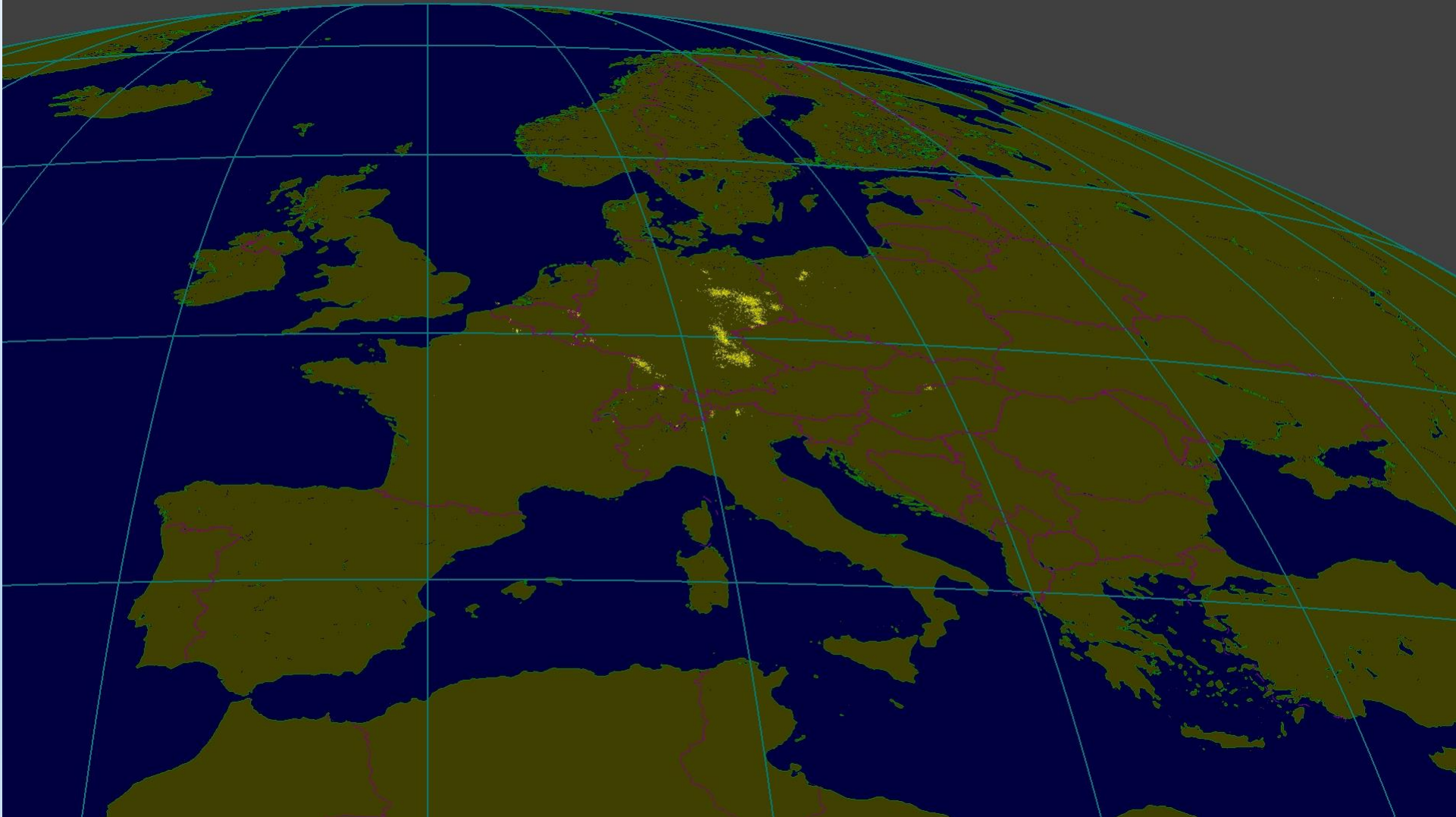
Legend:

- 
- 1 Sea surface
 - 2 Low to mid-level water clouds
 - 3 Mixed phase clouds at low and mid-levels
 - 4 Thick ice clouds (multi-layered clouds with ice on top)
 - 5 Thin cirrus clouds over land or sea (darker red over the seas)

Way from MSG towards MTG: MSGProc -> GEOProc

New data from: LI = Lightning Instrument

Single display of flash points detected in defined period of time over selected region:



Way from MSG towards MTG: MSGProc -> GEOProc

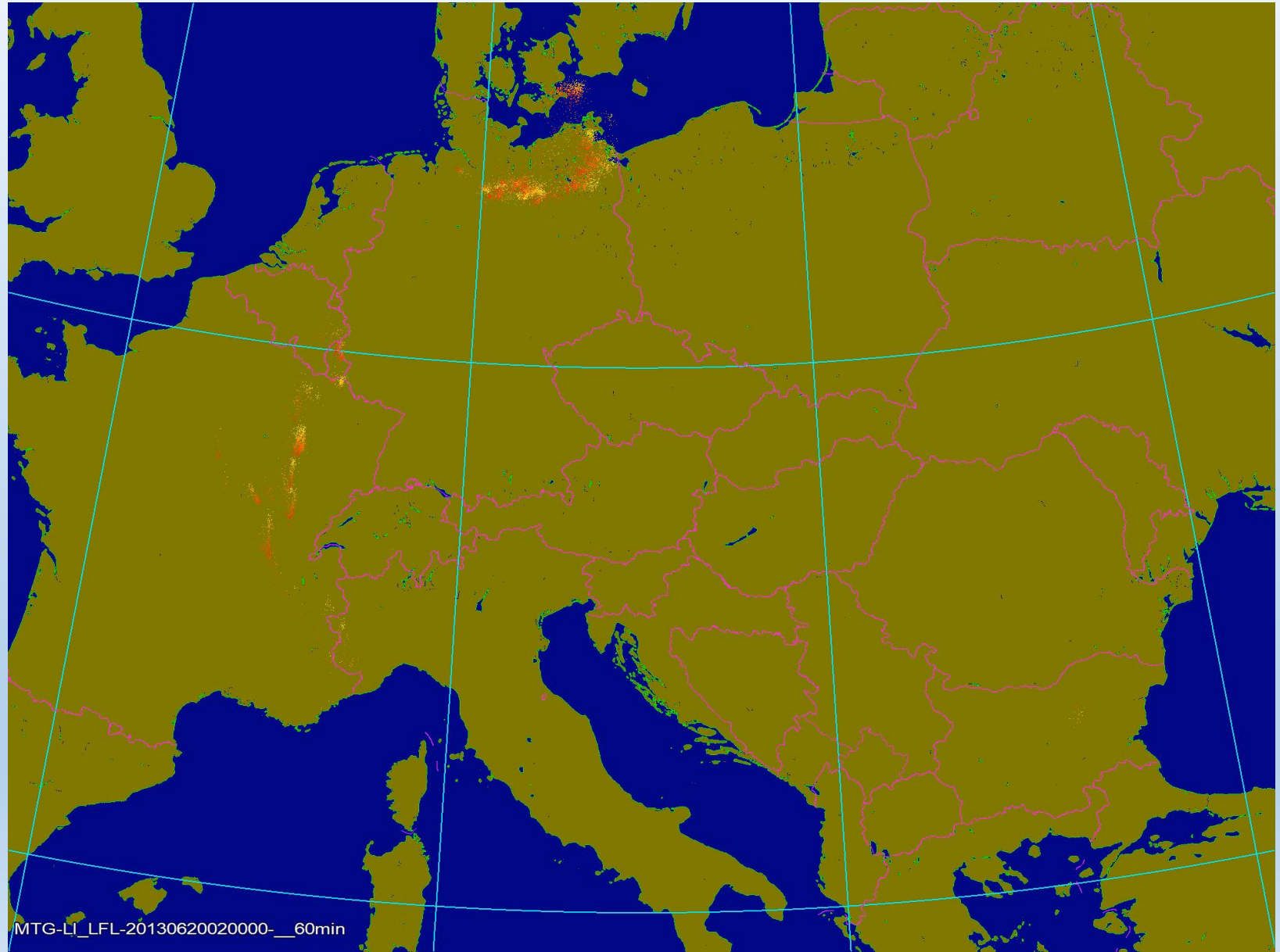
New data from: LI = Lightning Instrument

**MTG-LI LFL full day,
60min accumulations
in 5min time step:**

Legend:

Red – the oldest flashes

Yellow – the newest flashes



Way from MSG towards MTG: MSGProc -> GEOProc

New data from: LI = Lightning Instrument

LI-2-LFL Data Visualisation

1400 UTC - 1530 UTC

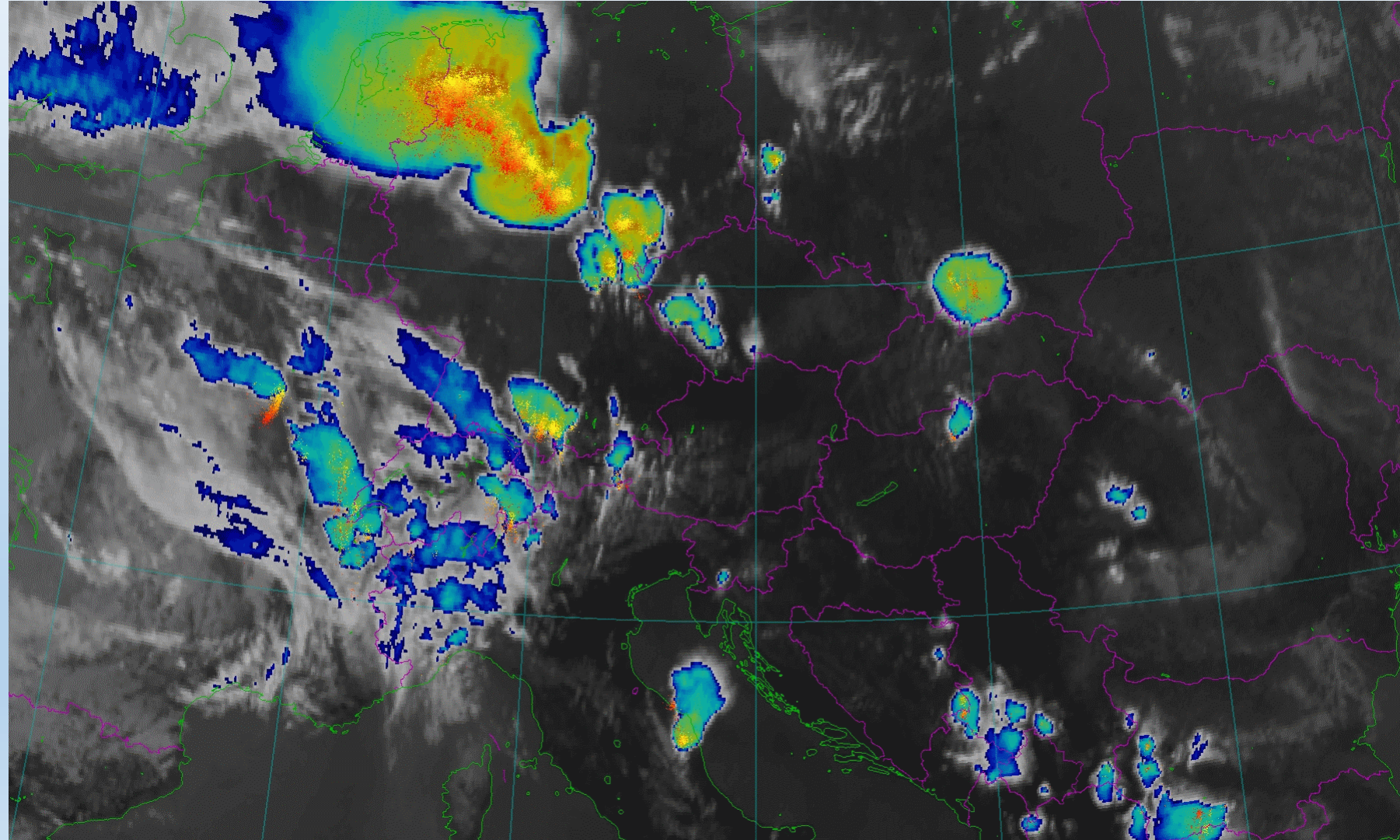
Enhanced IR MSG RSS, 60min accumulation

MTG-LI LFL full day,
60min accumulations
in 5min time step:

Legend:

Red – the oldest flashes

Yellow – the newest flashes



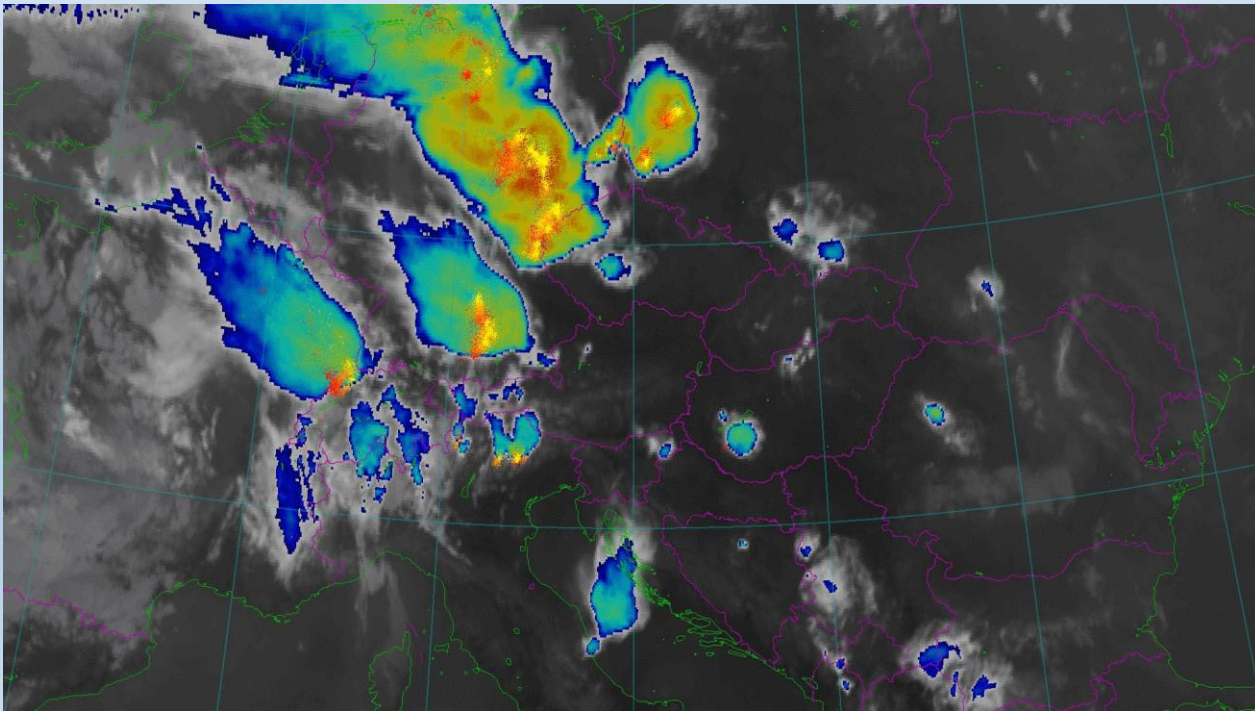
Way from MSG towards MTG: MSGProc -> GEOProc

New data from: LI = Lightning Instrument

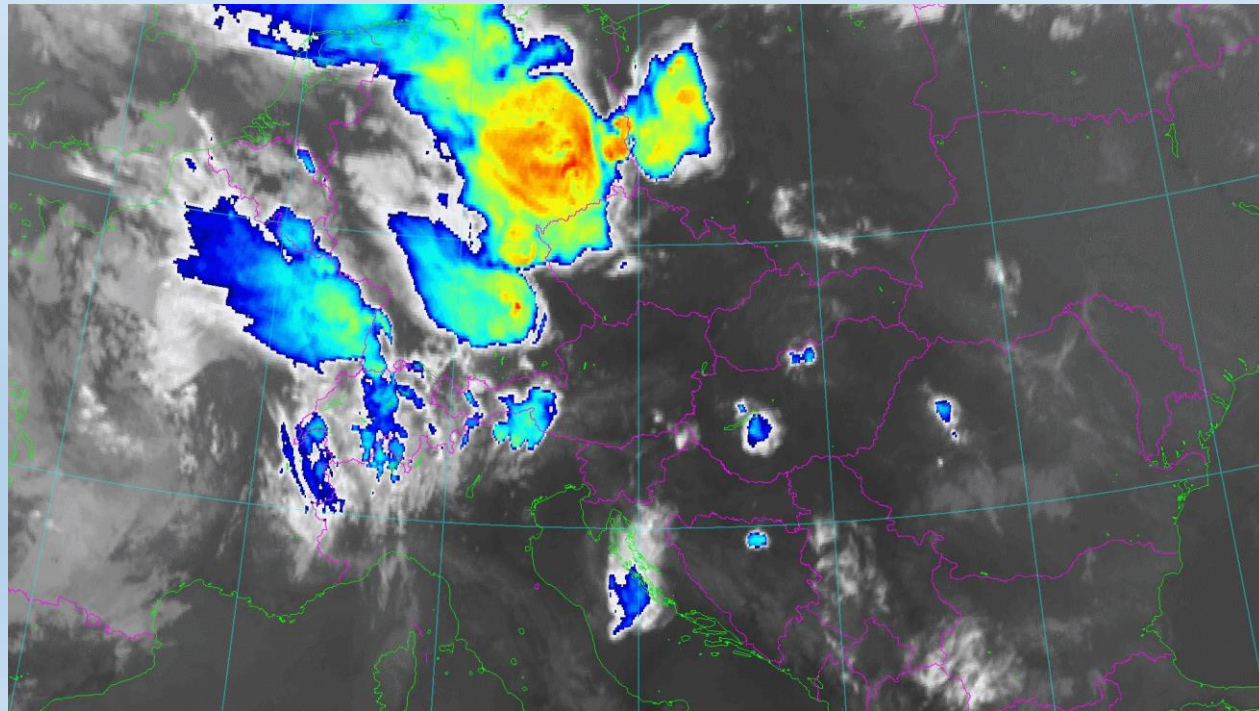
LI-2-LFL Data Visualisation Enhanced IR imagery overlaid
by flashes:

Main idea: **Looking for proper and useful ways of displaying Flash signal...**

1700 UTC



1800 UTC



Conclusions

MSGProc is running currently on DAWBEE stations

No errors or problems were reported in last year (after replacing PCs)

No requests to improve the software were received but some changes are very close, e.g. new format of HSAF precipitation products ... do you use these data?

I hope that you as users are satisfied with the performance of DAWBEE stations

I am prepared to communicate any requests for improvements

As the MSG satellites will be operational for next years in parallel to the new MTG satellite

If there will be interest to try my latest solutions I will be happy.

It is important that you find a connection between data, software and applications, and it is best to follow the new EUMETSAT projects EUMETView, DataTaylor, Online web user interface etc.

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