

VISUALIZATION OF METEO DATA

LATEST INFO DWD SOARING FLIGHT FORECAST

On the Importance of Synoptic Meteorology

Visualization of Surface Observations by METWATCH

Presentation of Meteo Data online www.vorticity.de

More Synoptic Data and Charts on www.vorticity.de

Idea of Verification using HINDCAST

DWD SOARING FLIGHT INFORMATION TOPTHERM

- **Toptherm will be discontinued by the end of March**
- **A new product based on the ICON model will replace it**
- **The NWP convection scheme will be used for dry convection**
- **The grid-point-data will be accumulated over GAFOR areas**
- **There will be a reference station for each GAFOR area**
- **There will be no glider type-specific data available**
- **DWD is looking forward to feedback, adjustment, improvement**

DWD SOARING FLIGHT INFORMATION TOPTHERM

This will be the information available ...
... averaged over each GAFOR area
... for the grid-point of the reference station of each GAFOR area

Mittelwind + Böen	≥ 75 km/h	55 - < 75 km/h	35 - < 55 km/h	25 - < 35 km/h	< 25 km/h		
Mittleres Steigen	0 m/s	< 0.5 m/s	0.5 - < 1.5 m/s	1.5 - < 2.5 m/s	2.5 - < 3.5 m/s	≥ 3.5 m/s	
PFD/1h	< 10 km	10 - < 30 km	30 - < 60 km	60 - < 90 km	90 - < 120 km	120 - < 150 km	≥ 150 km
PFD Tagessumme	< 50 km	50 - < 200 km	200 - < 400 km	400 - < 600 km	600 - < 800 km	800 - < 1000 km	≥ 1000 km

ON THE IMPORTANCE OF SYNOPTIC METEOROLOGY

More and more computer generated data – great progress!!

But: Basic knowledge is more and more lost...

... What is the structure of a Thermodynamic Diagram?

... How do I evaluate Radiosoundings? ECMWF Vertical Profiles...

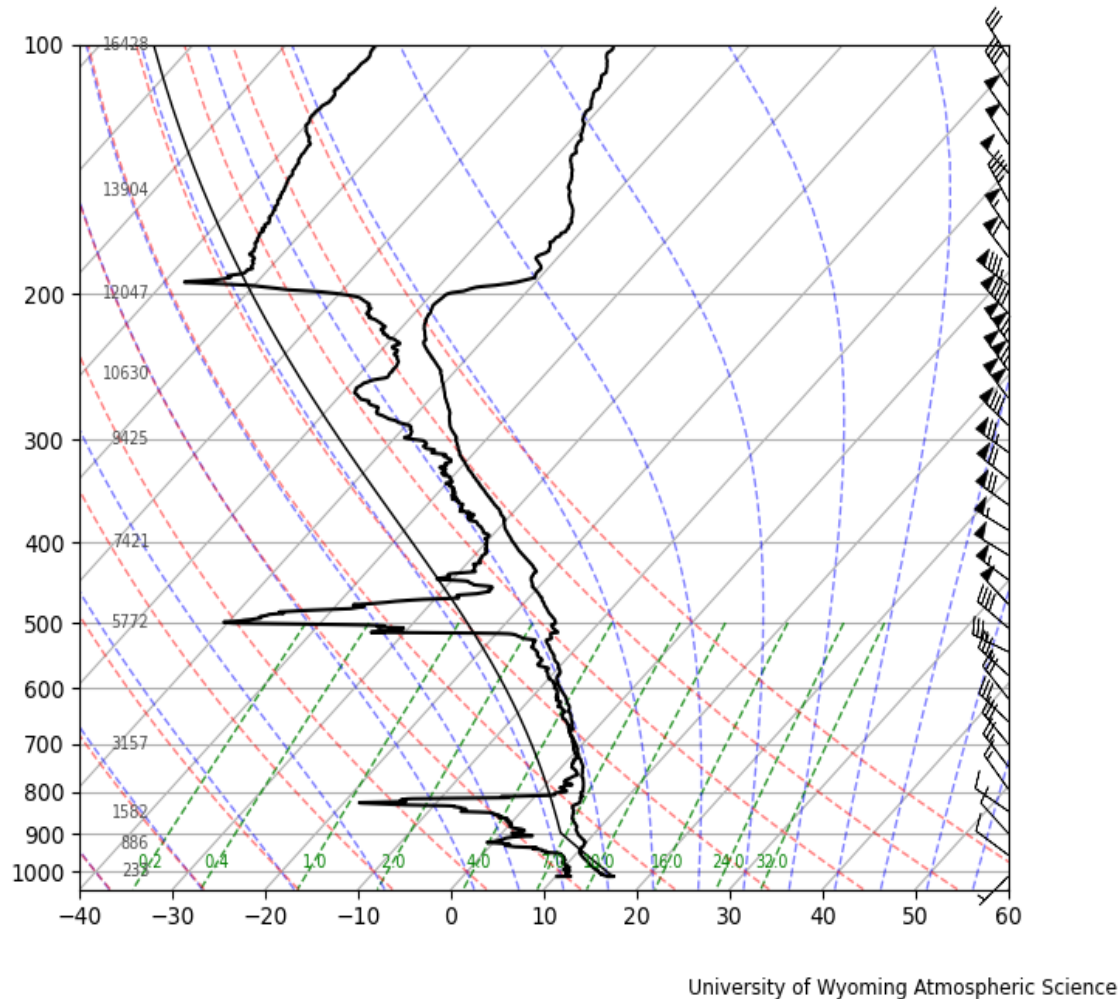
... How is the general synoptic situation?

... What does it mean for the soaring conditions I have to expect

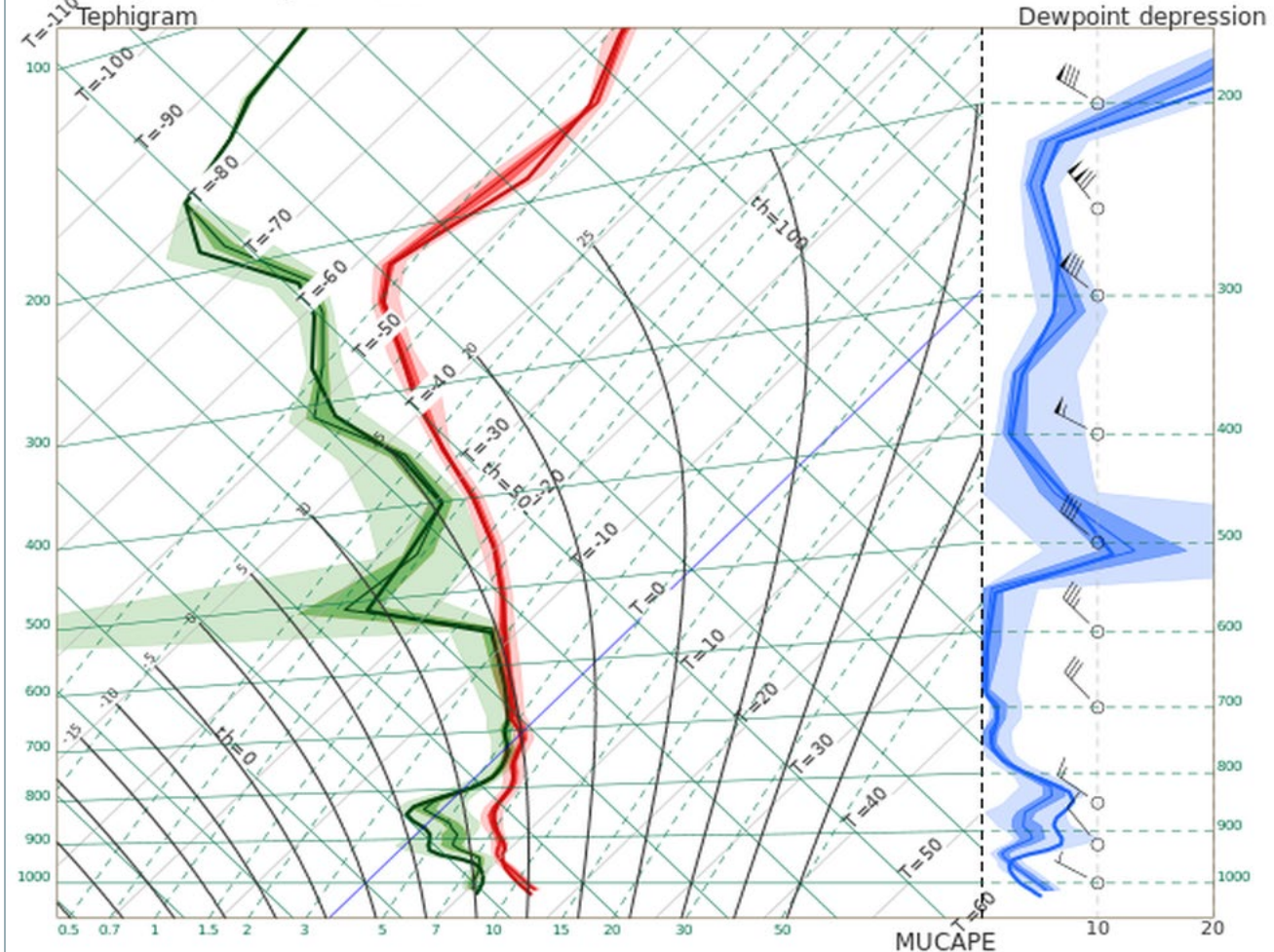
... How can I judge the Forecast quality?

COMPARISON TEMP RADIOSOUNDING VS ECMWF

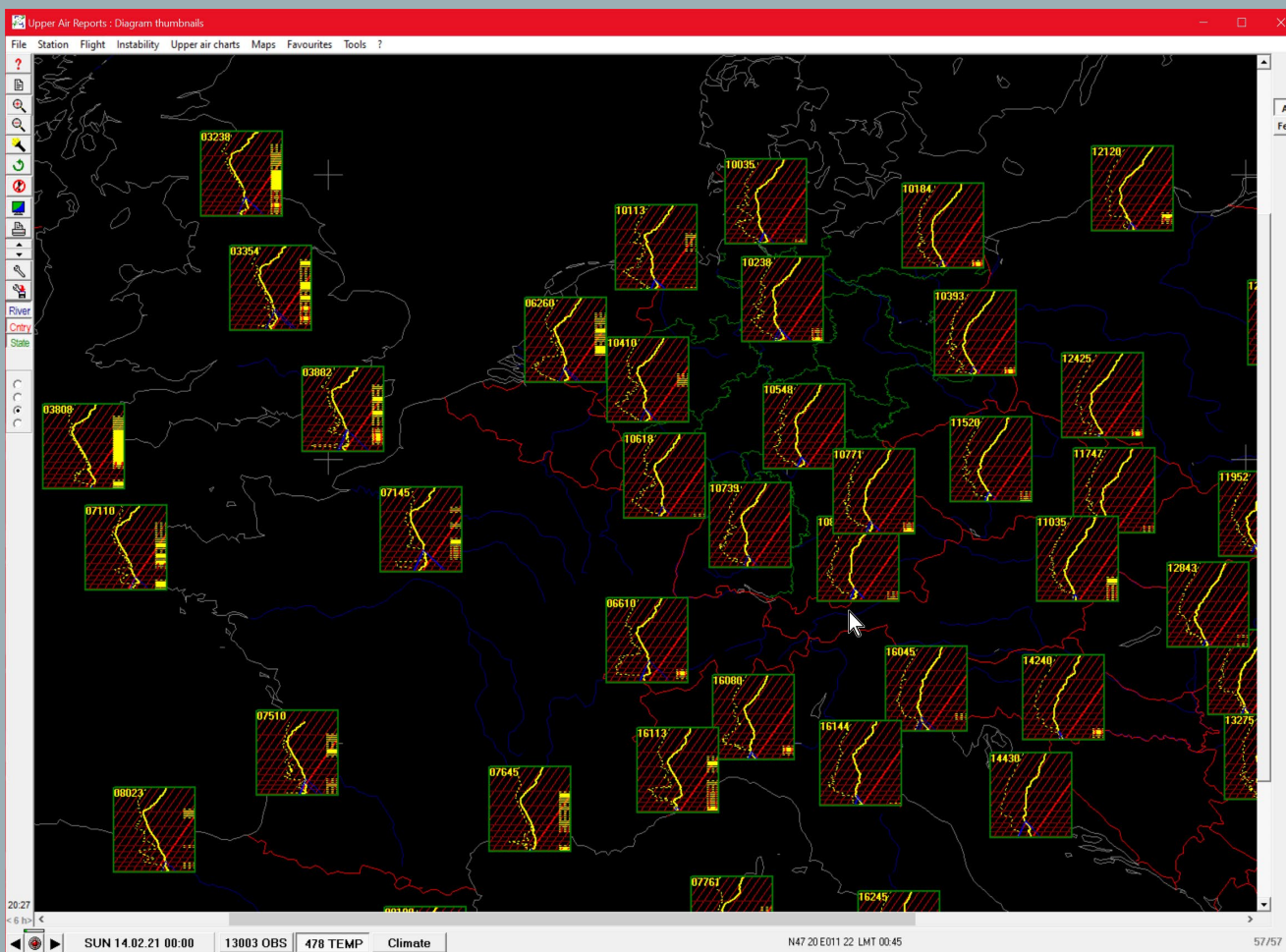
Station 08536 starting 1117Z 16 Feb 2024



ENS Vertical Profile
Lisbon - Lisbon - Portugal 38.73°N 9.27°W (ENS land point) 76 m
Friday 16 February 2024 12 UTC
Tephigram

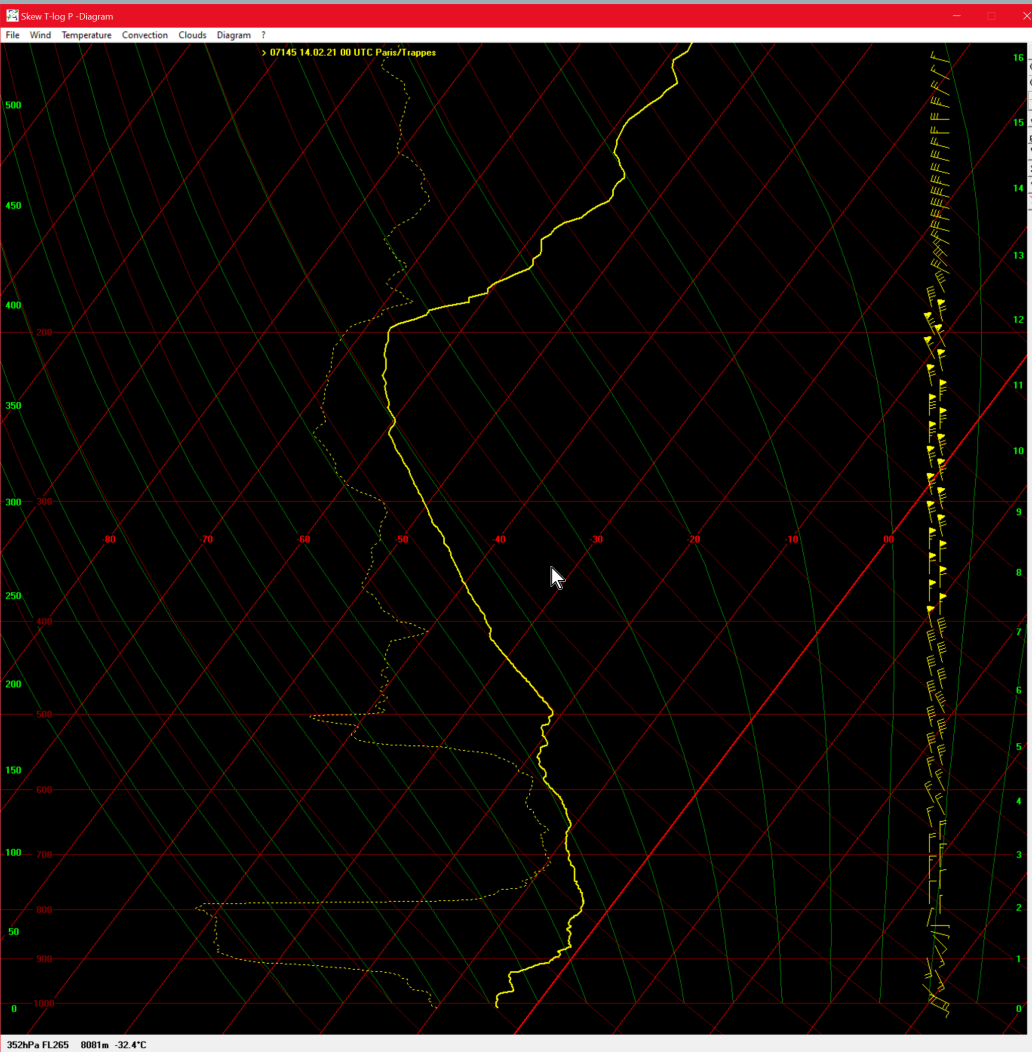


METWATCH – INVESTIGATING SYNOP METAR TEMP



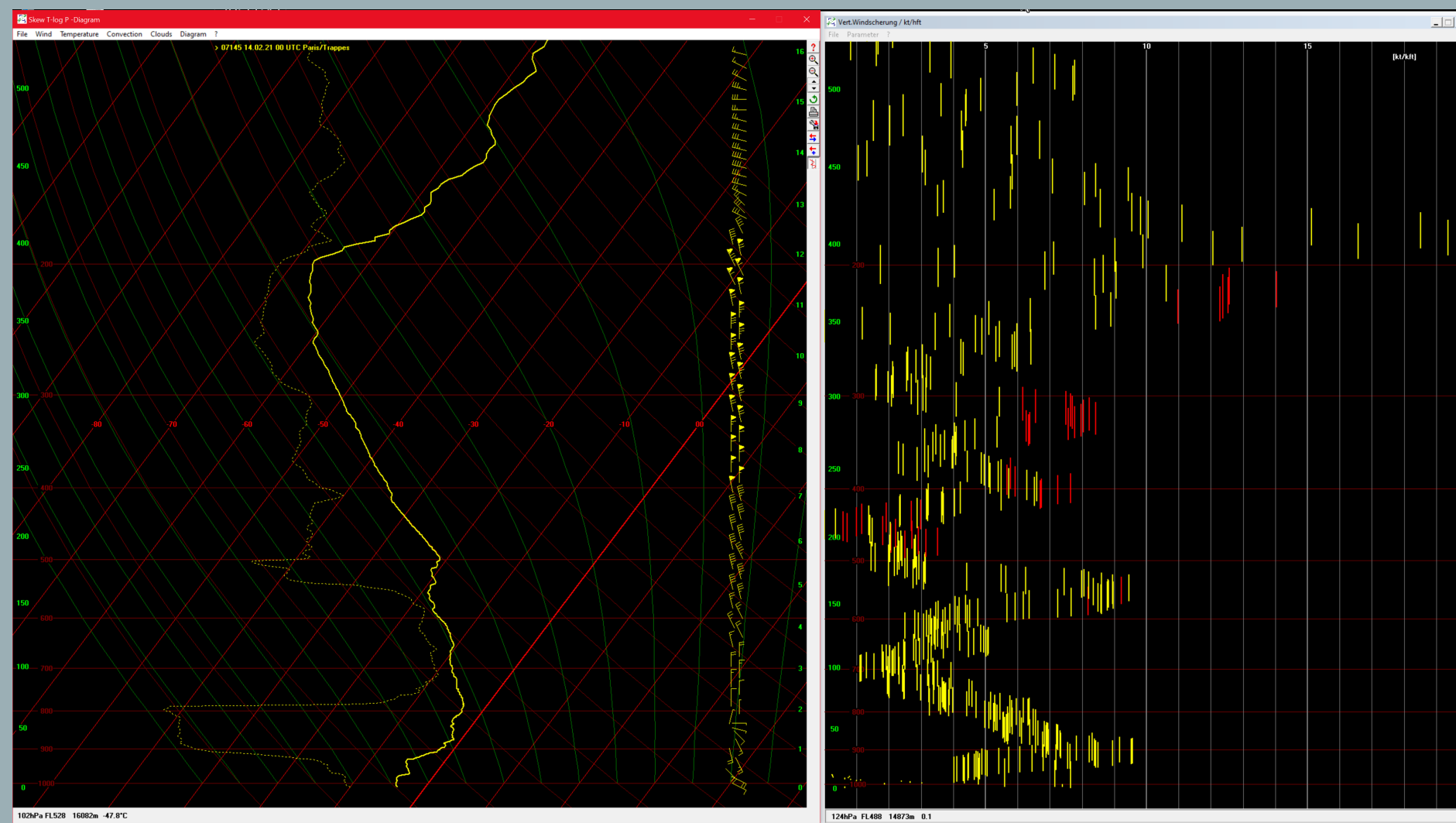
**TEMP/SYNOP parameters,
Thumbnails of TEMP
TEMP MAX Vertical Windshear**

METWATCH – INVESTIGATING SYNOP METAR TEMP

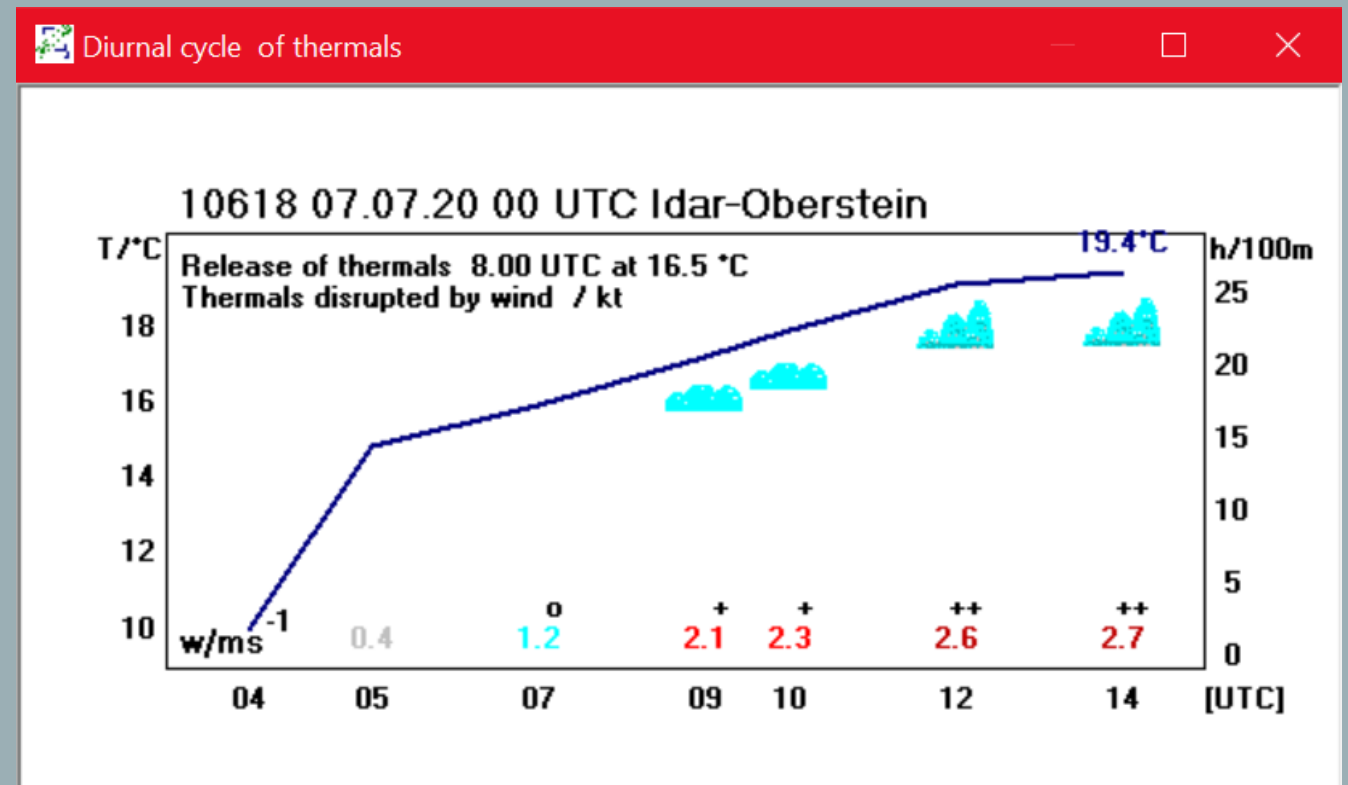
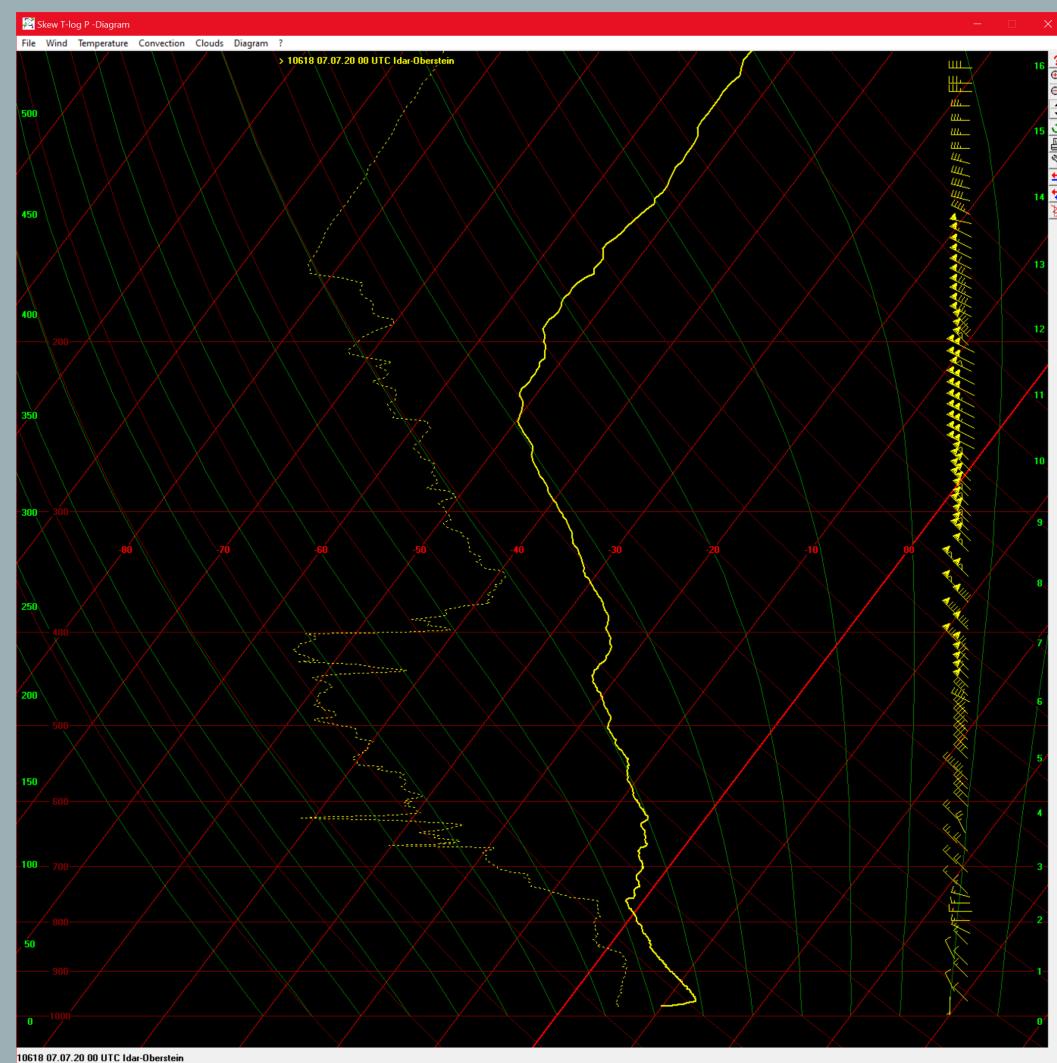


TEMP/SYNOP parameters,
Thumbnails of TEMP
TEMP MAX Vertical Windshear
Richardson Number of VWS
Evaluation of Thermals

METWATCH – INVESTIGATING SYNOP METAR TEMP



METWATCH – INVESTIGATING SYNOP METAR TEMP



METWATCH – INVESTIGATING SYNOP METAR TEMP

How can I use it on my own ?

Contact me: bernd.richter@web.de

- > Download Metwatch from the internet
- > You send me the registration key
- > I will send you the licence key.

ON THE IMPORTANCE OF SYNOPTIC METEOROLOGY

More and more computer generated data – great progress!!

But: Basic knowledge is more and more lost...

... continued

... How is the general synoptic situation?

... What does it mean for the soaring conditions I have to expect

... How can I judge the Forecast quality?

This is where www.vorticity.de comes into play...

The idea of www.vorticity.de is the following

- Make synoptic data available in the basic way: WMO symbols
- Make aerological data available
- Show combinations of products for a deeper understanding
 - e.g. MSLP ANALYSIS + SAT + SWC
 - e.g. MSLP ANALYSIS + FORECAST + HINDCAST
 - e.g. GRIB data + classic analysis data
- Offer a Portal for Basic Synoptic Data at a glance...



www.vorticity.de



Comparison of Weather Charts GRIB-/MOS-/ENS-Data

Verification by HINDCAST



Warnings Meteograms DEU-Charts

Hourly Observation Charts

DEU	Now	wwTlTdVVCgFbFxFfPPap	*R1R61224	Tn5cmTx
EUR	Now	wwTlTdVVCgFbFxFfPPap	*R1R61224	Tn5cmTx
GLO	Now	wwTlTdVVCgFbFxFfPPap	*R1R61224	Tn\\\\Tx

(A) Analysis

(B) Forecast

(B) OldStyle

(C) MOS/ENS

(D) Webcams

(E) Tropics

(F) Aviation

(G) GRIB+ANA

(G) GRIB+VHS

(K) Climate ●

(L) Link etc

(L) TV

(L) Video 360

(R) Archive D

(S) Satellite

(T) TEMP BUFR

(V) Varia edu

(...) HELP DE



Warnings Meteograms DEU-Charts



Hourly Observation Charts

DEU Now

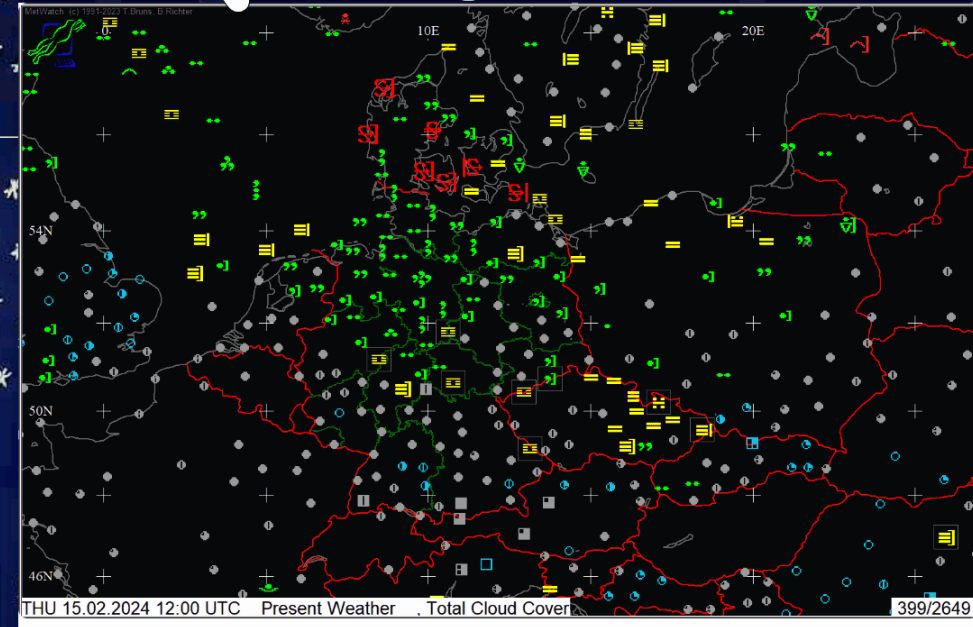


WT1TdVVCgFbFxFfPPap R1R61224

Tn5cmTx

Tn5cmTx

Tn\\Tx



360

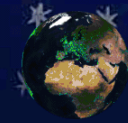
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ICE AWI MET Obs NMY T Y Y
Ship@HAM HAM KEL SOU MLT NYC SYD

Verification by HINDCAST



Warnings Meteograms DEU-Charts

Thu 15-02-2024

17:56:50 UTC



Hourly Observation Charts

DEU Now wwT1TdVVCgFbFxFfPPap R1R61224 Tn5cmTx
EUR Now wwT1TdVVCgFbFxFfPPap R1R61224 Tn5cmTx
GLO Now wwT1TdVVCgFbFxFfPPap R1R61224 Tn\\\\Tx

(A)

Analysis

(F)

Aviation

(L)

Video 360

(B)

Forecast

(G)

GRIB+ANA

(R)

Archive D

(B)

OldStyle

(G)

GRIB+VHS

(S)

Satellite

(C)

MOS/ENS

(K)

Climate

(T)

TEMP*BUFR

(D)

Webcams

(L)

Link etc

(V)

Varia*edu

(E)

Tropics

(L)

TV

(...)

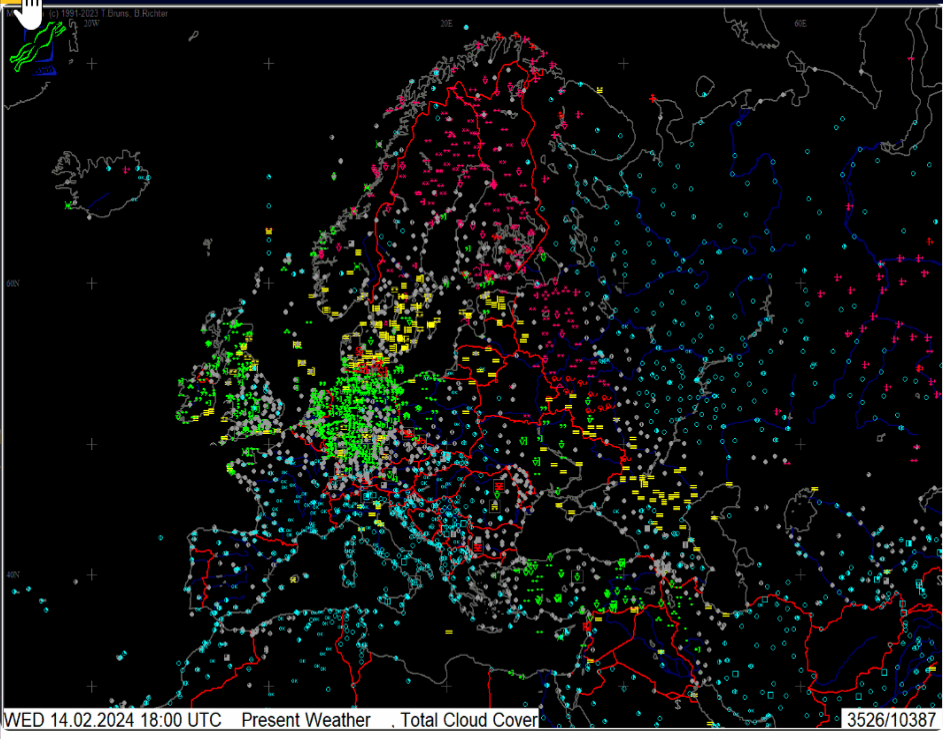
HELP DE



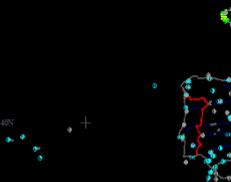
3 FIX PARAMETER @ Hourly Observation Times 00,01...23 UTC

EUR Now Flip-book Latest available Charts of all parameters

EUR ww	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	UTC
EUR Tl	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17							
EUR Td	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17							
EUR VV	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17							
EUR Cg	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17							
EUR Fb	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17							
EUR Fx	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17							
EUR FF	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17							
EUR PP	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17							
EUR ap	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17							
EUR R01	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17							



4 FIX PARAMETER Weekly Loop @ Observation

Day of	Week	Mondy	Tusdy	Weddy	Thudy	Fridy					
EUR ww	Week	M0628	T0628	W0628	T0628	F0628					
EUR FF	Week	M0628	T0628	W0628	T0628	F0628					
EUR Fx	Week	M0628	T0628	W0628	T0628	F0628					
EUR R06	Week	M0628	T0628	W0628	T0628	F0628					
EUR R12	Week	M0618	T0618	W0618	T0618	F0618					
EUR R24	Week	Mon06	Tue06	Wed06	Thu06	Fri06					
EUR Sno	Week	Mon06	Tue06	Wed06	Thu06	Fri06					
EUR Tn5	Week	Mon06	Tue06	Wed06	Thu06	Fri06				Sat06	Sun06
EUR Tn	Week	Mon06	Tue06	Wed06	Thu06	Fri06				Sat06	Sun06
EUR Tx	Week	Mon18	Tue18	Wed18	Thu18	Fri18				Sat18	Sun18

5 LATEST SYNOP PARAMETER LOOP @ 00/06/12/18 UTC

Latest	DEU	00	06	12	18	UTC
Latest	EUR	00	06	12	18	UTC
Latest	GLO	00	06	12	18	UTC

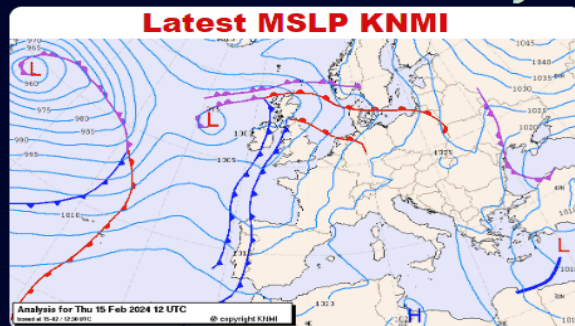


A3

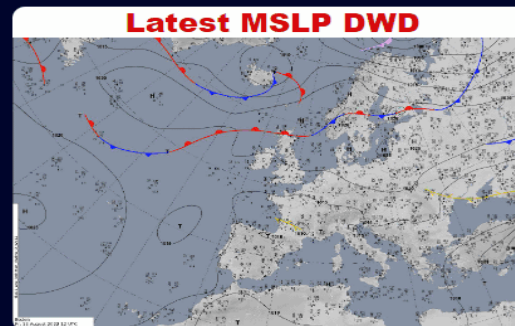
Analysis Charts RAD SAT

1 MSLP Analysis KNMI-DWD-UKMO

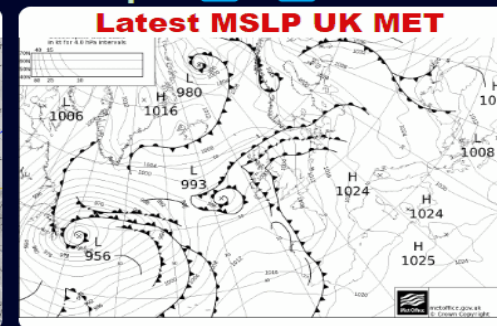
● Latest DWD 3-hourly Station Plot Chart Central Europe ▶▶ ▶▶



Last Week ▶▶



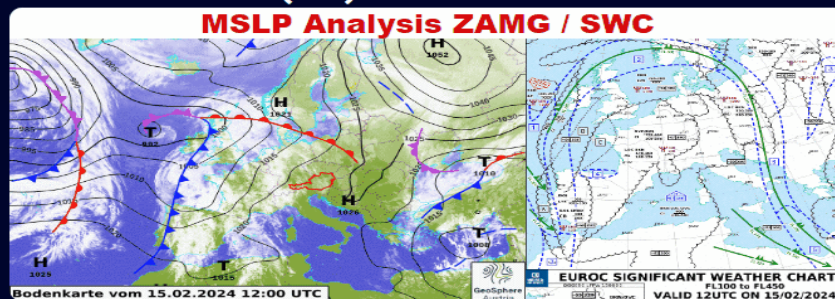
Last Week ▶▶



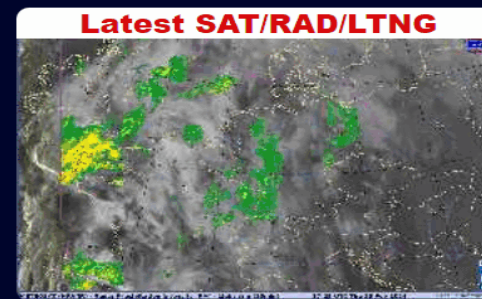
Last Week ▶▶

2 MSLP Analysis ZAMG/SWC SAT RAD EUR

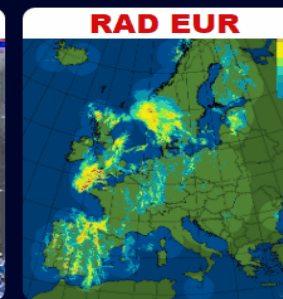
URL DE-AT-UK(bw)-NL SWC C POL RUS LOGS NA C TIME YTT



Last Week ▶▶ Latest SWC ▶▶

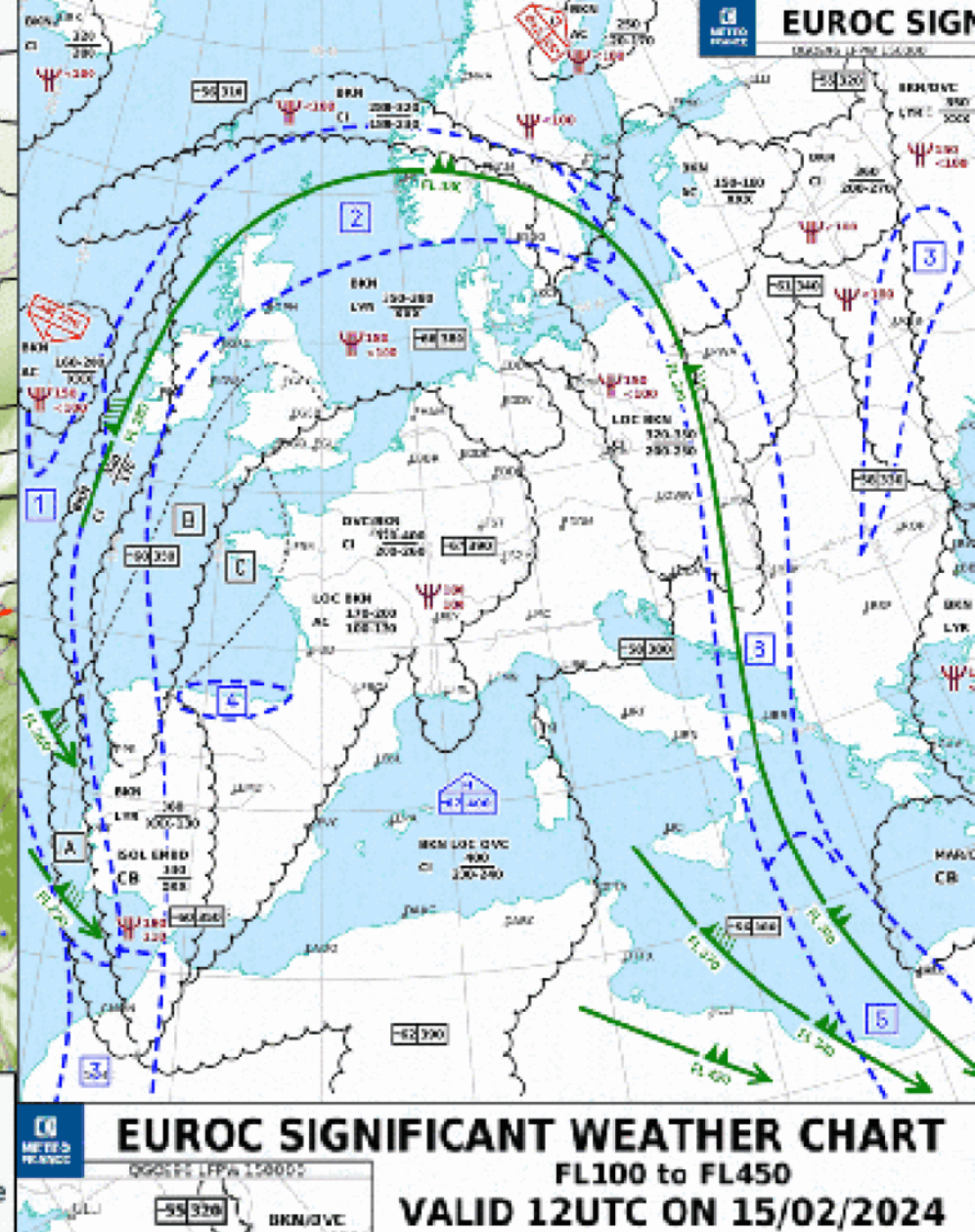
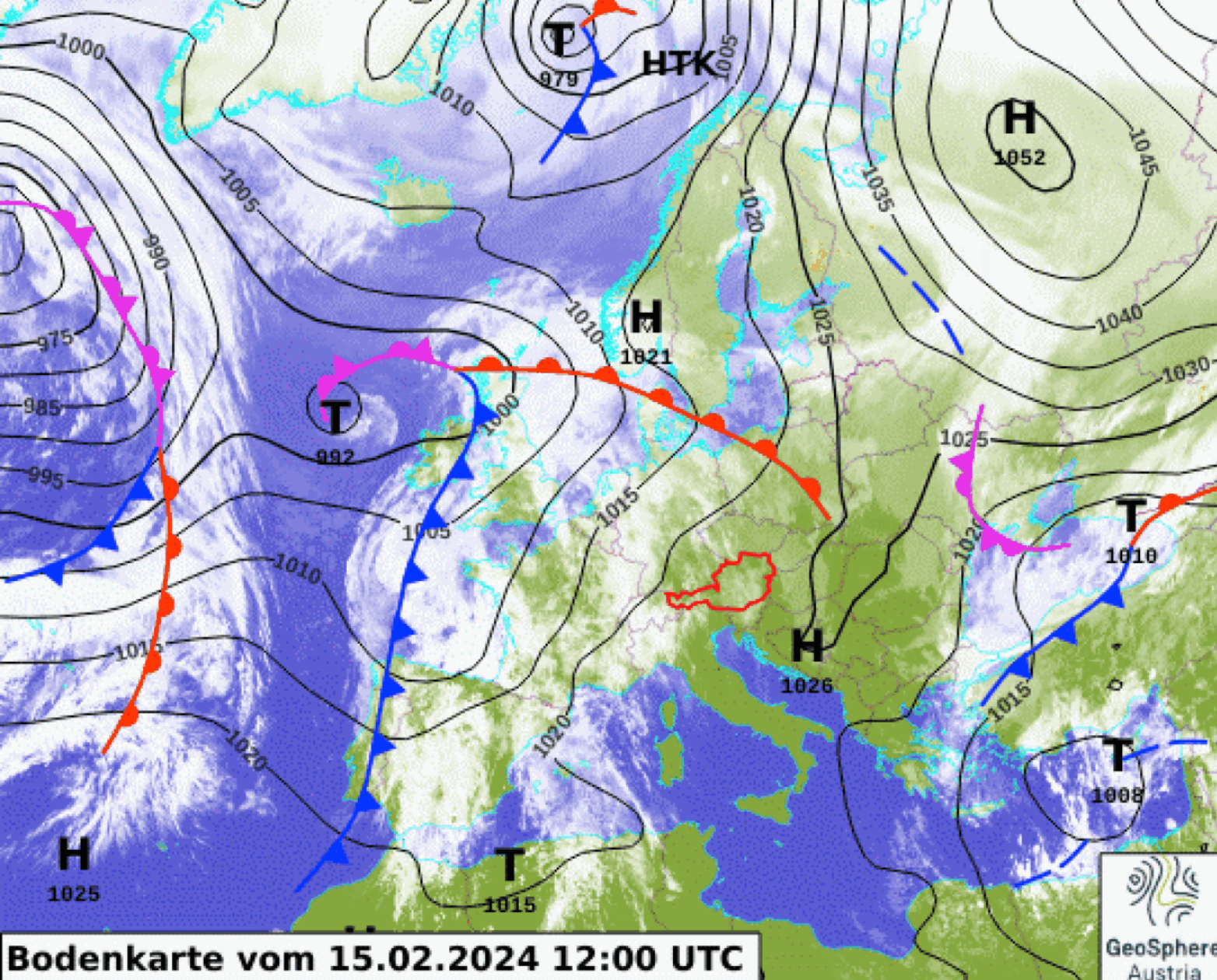


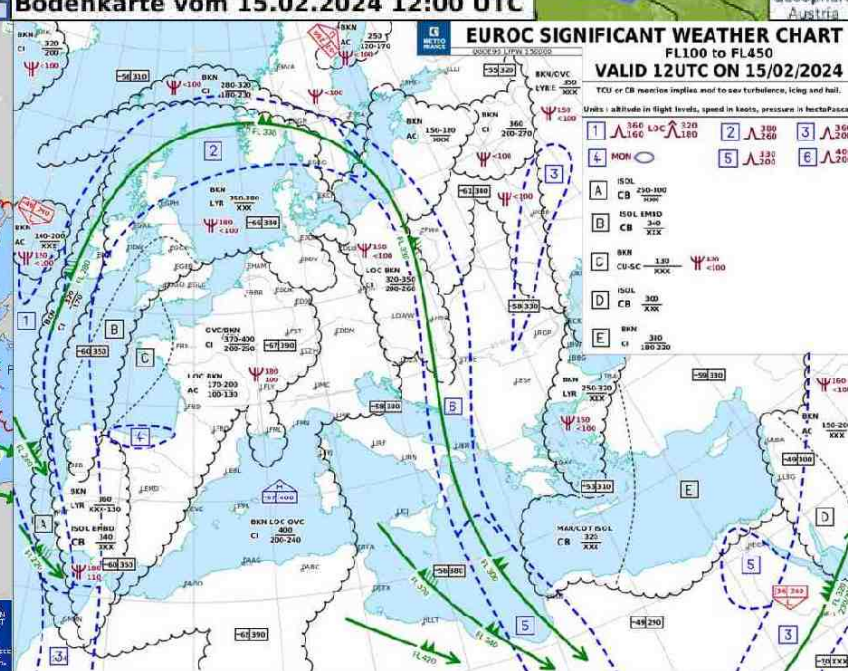
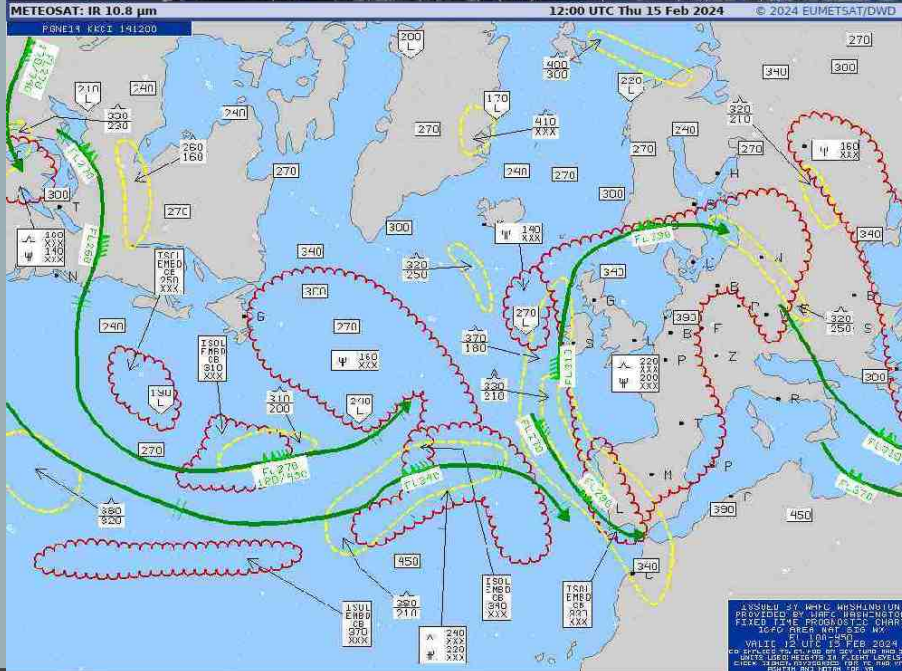
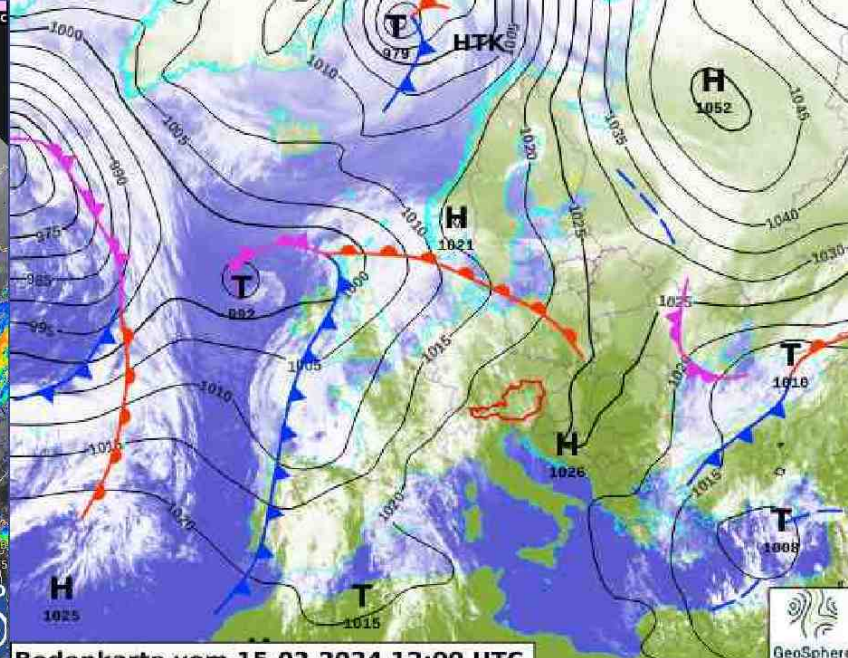
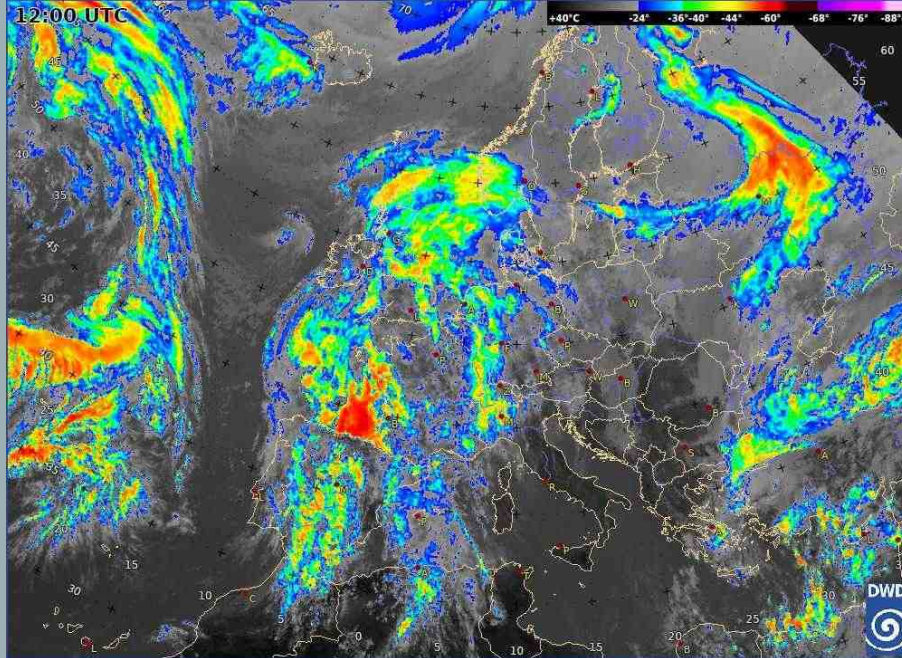
Last Week ▶▶

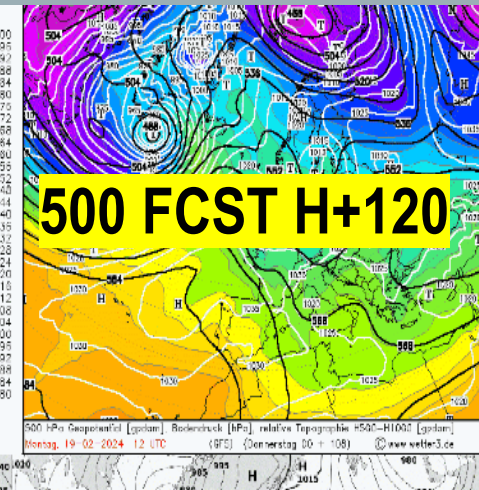
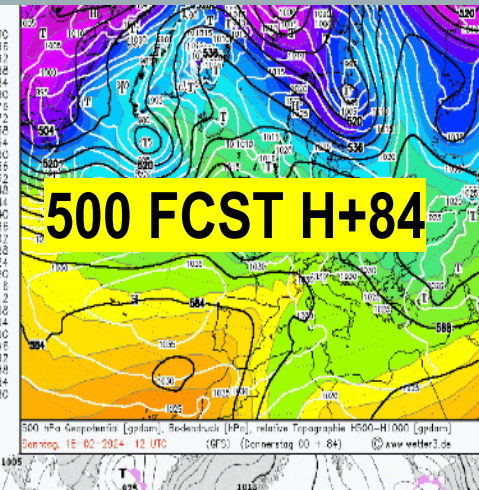
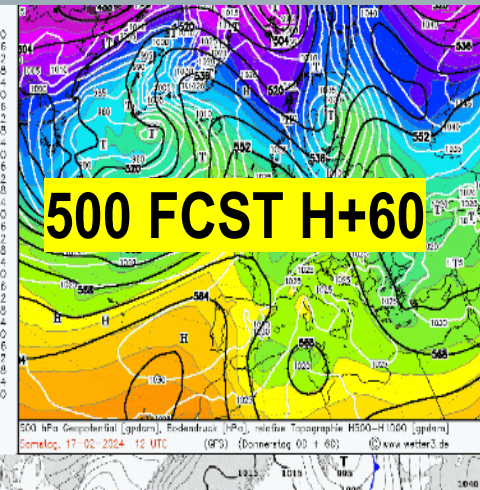
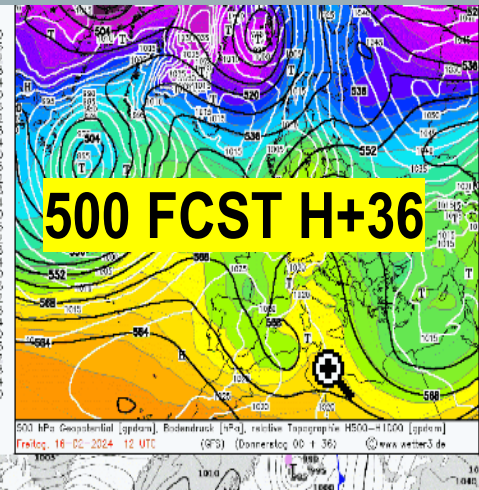
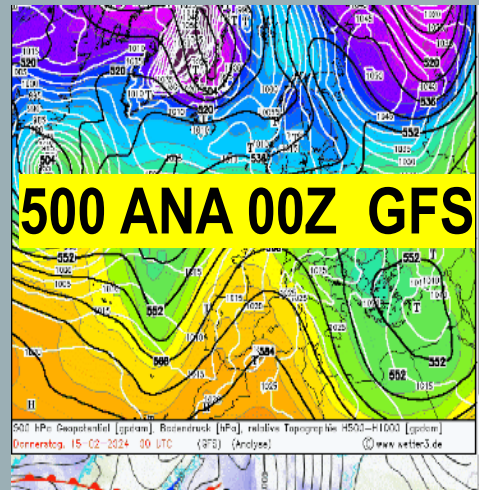


Loop ▶▶

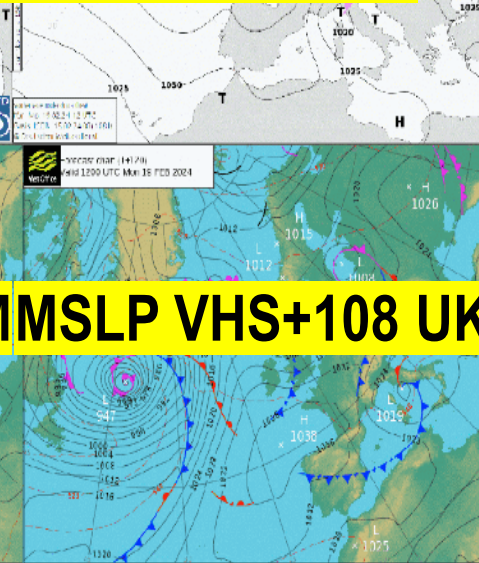
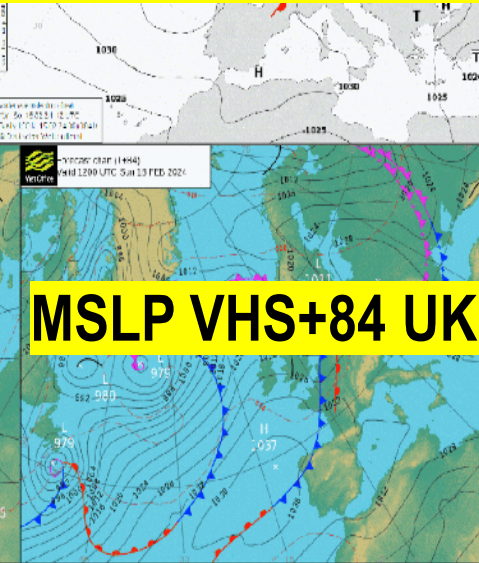
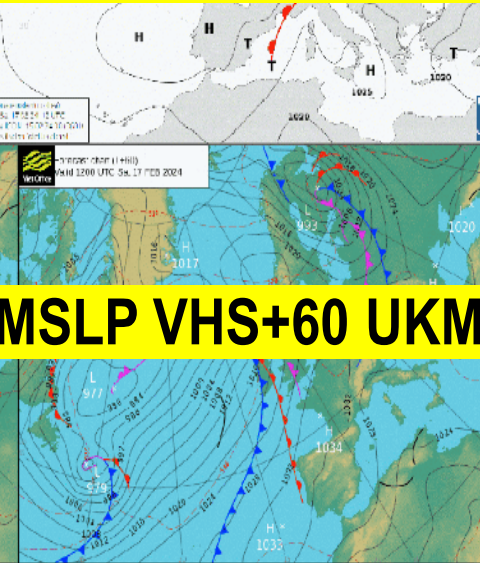
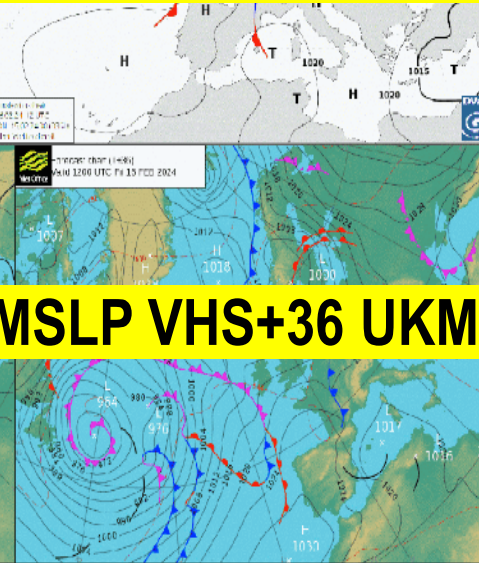
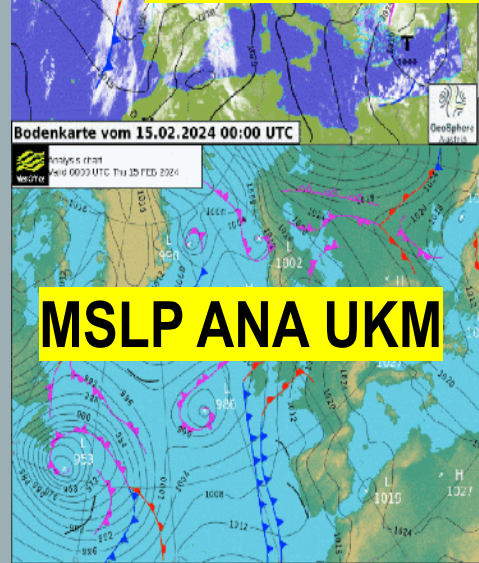
'Antizyklonaler Störungsbogen'

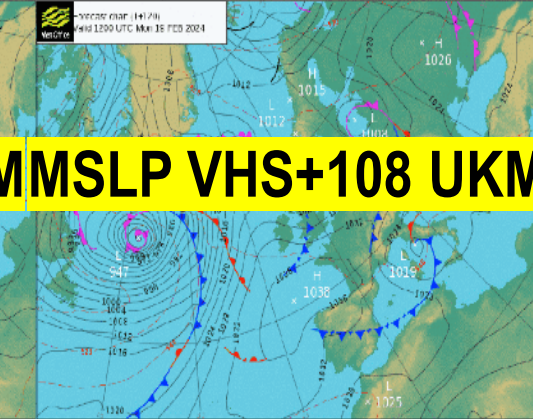
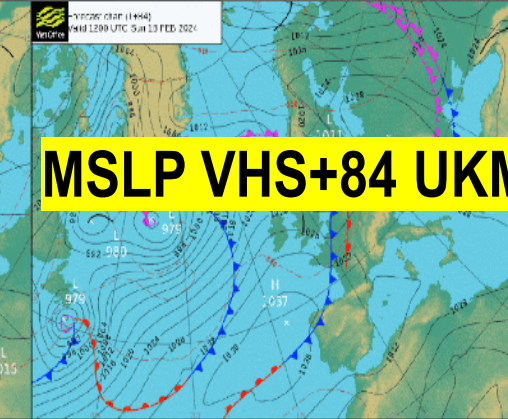
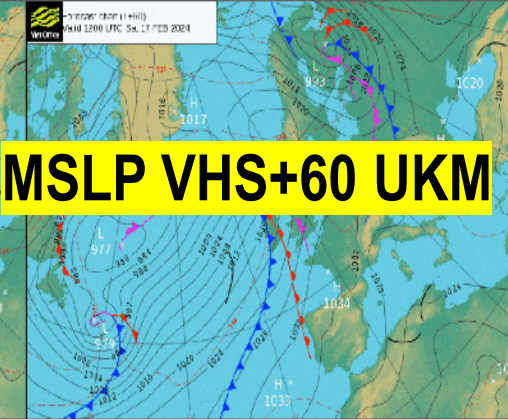
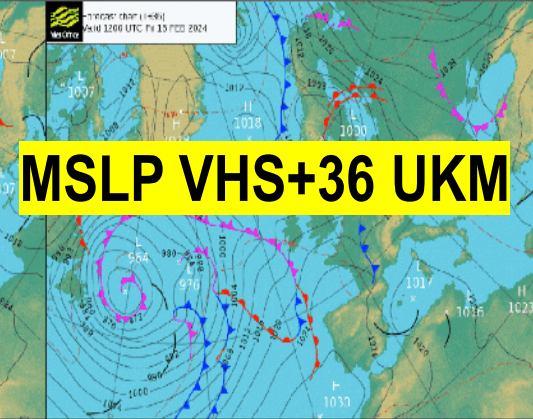
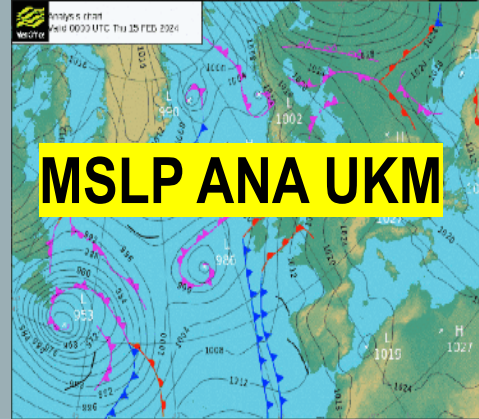
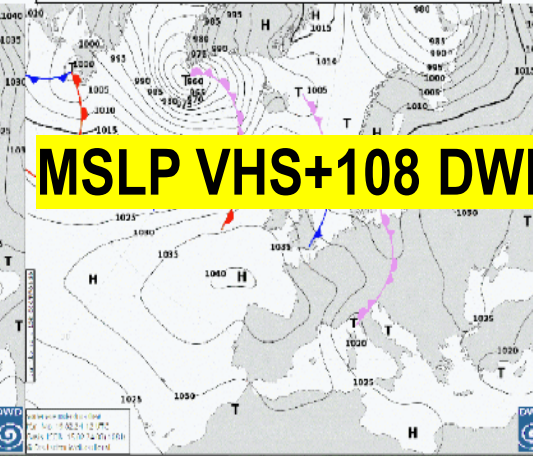
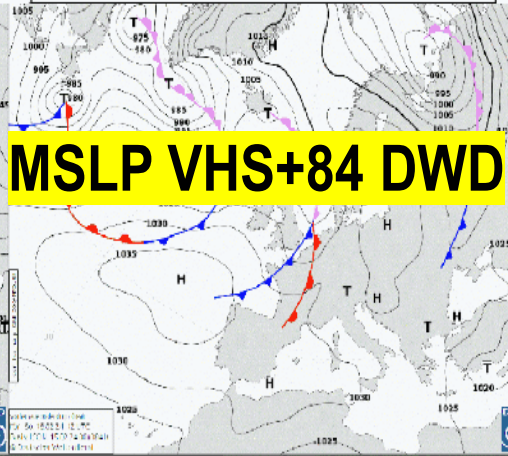
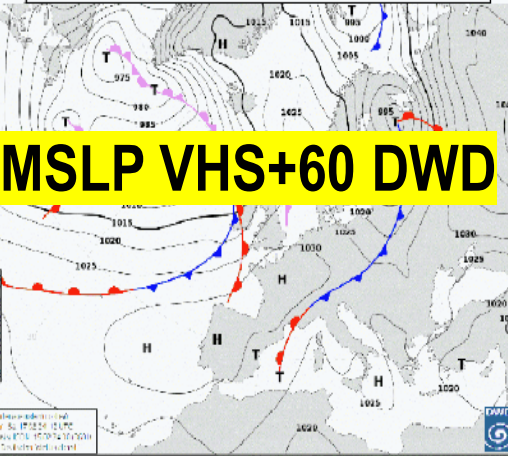
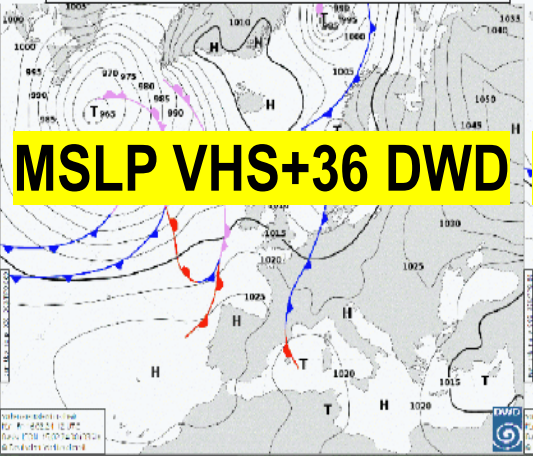
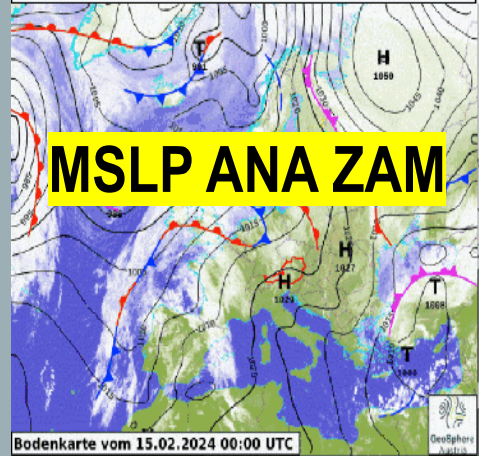
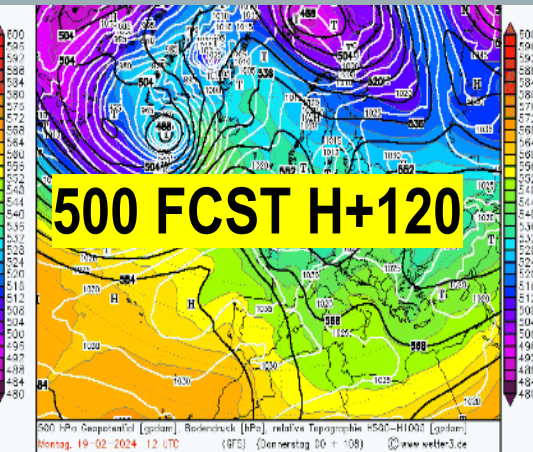
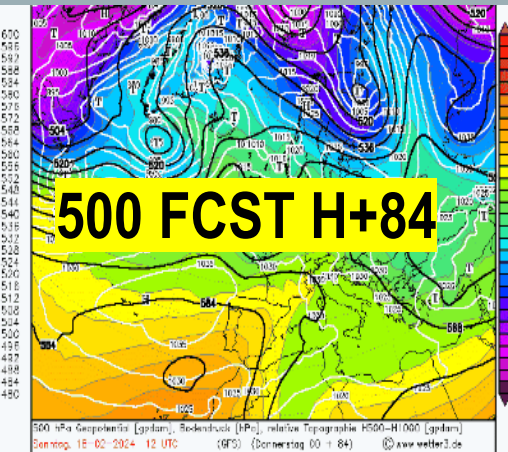
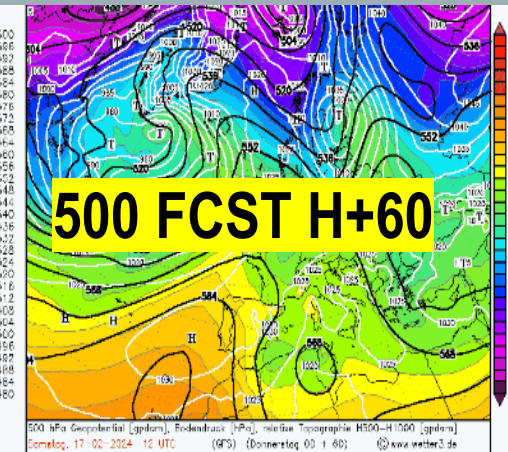
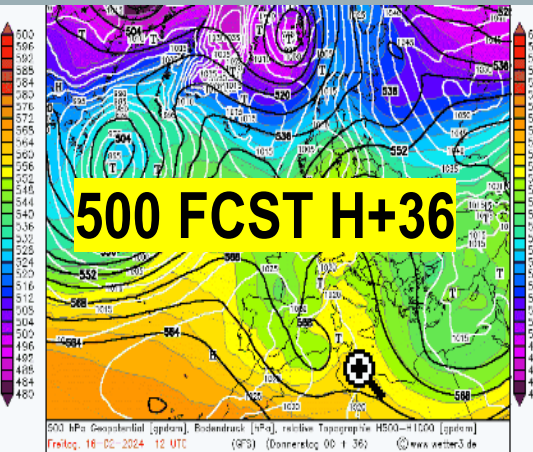
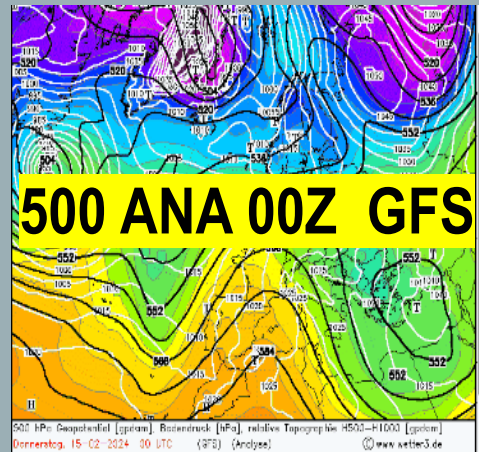


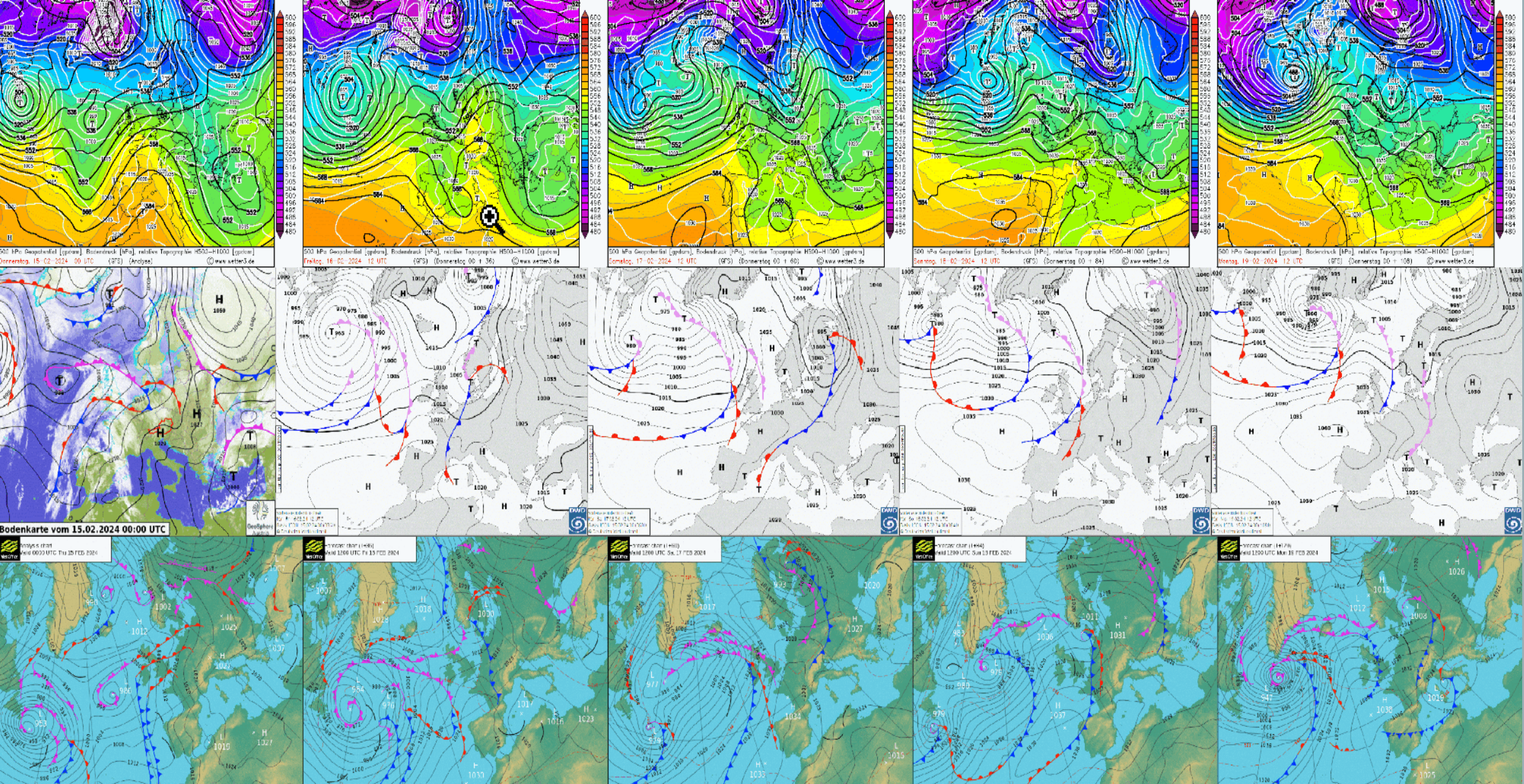




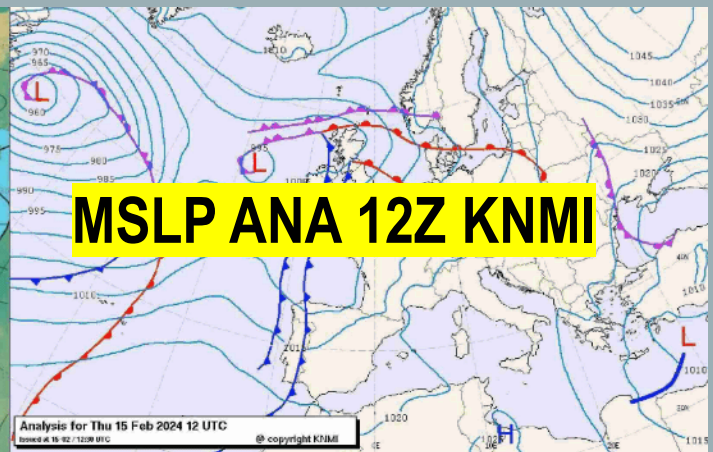
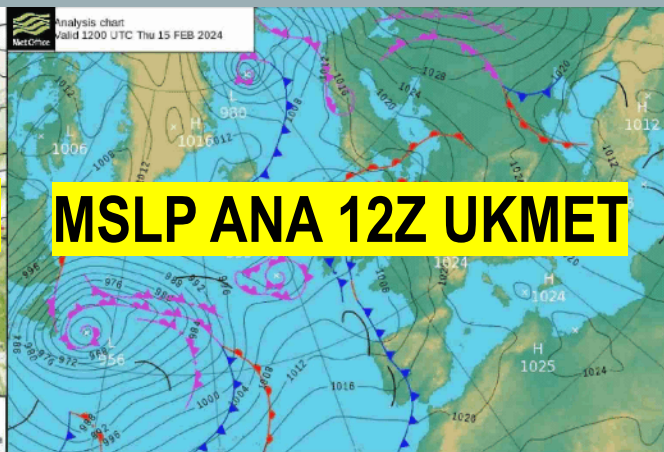
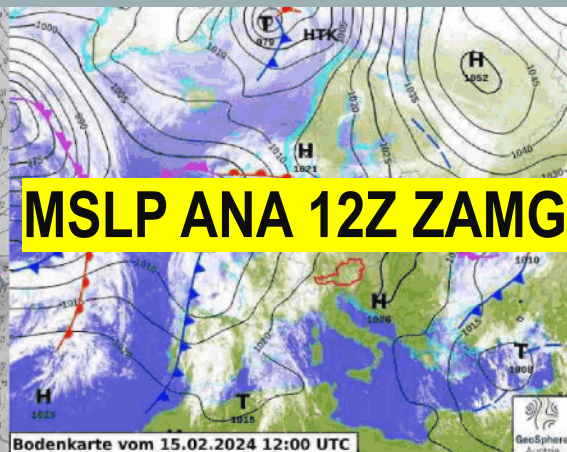
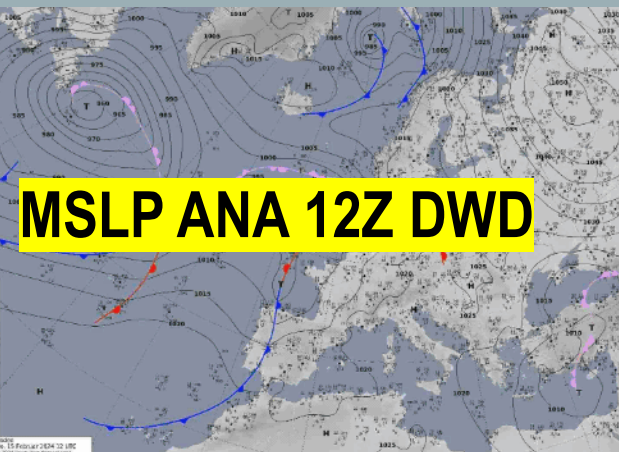
MSL DWD UKMET FORECAST DWD



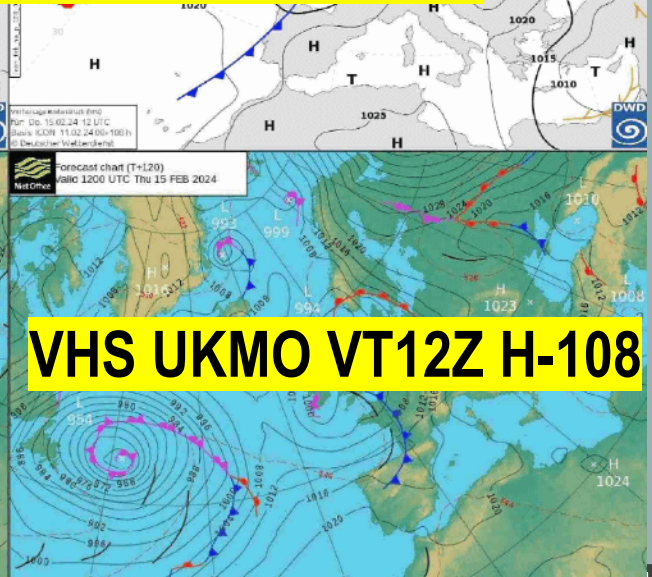
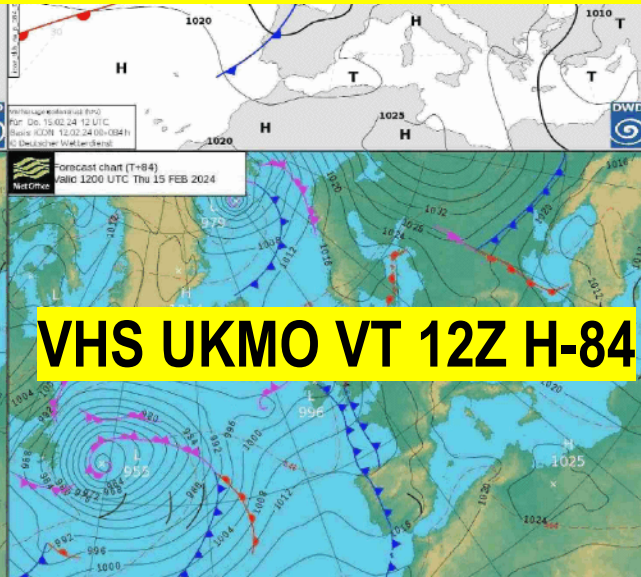
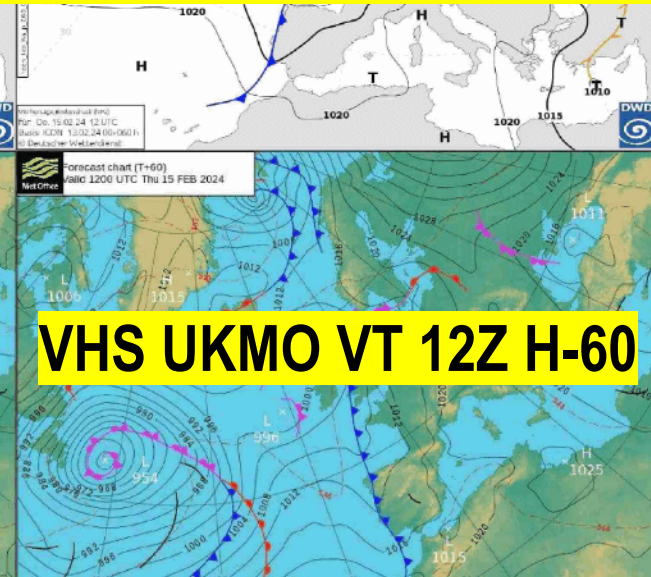
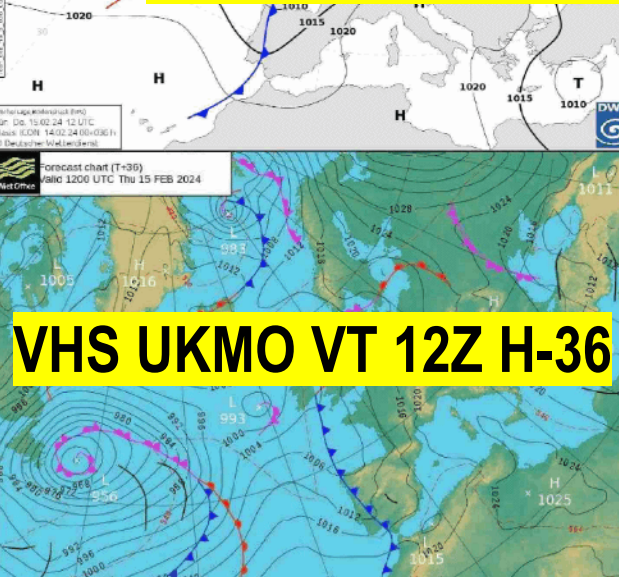


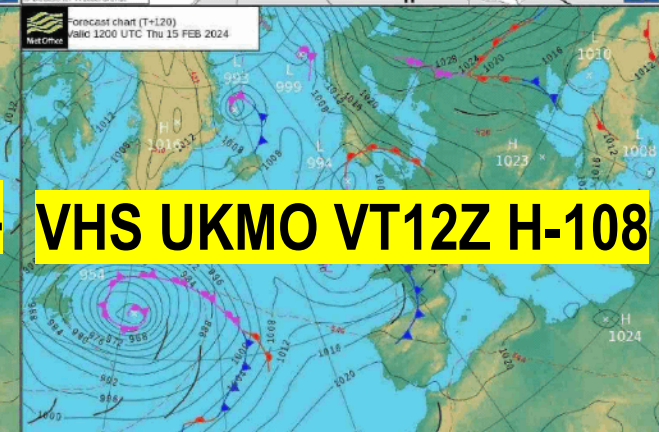
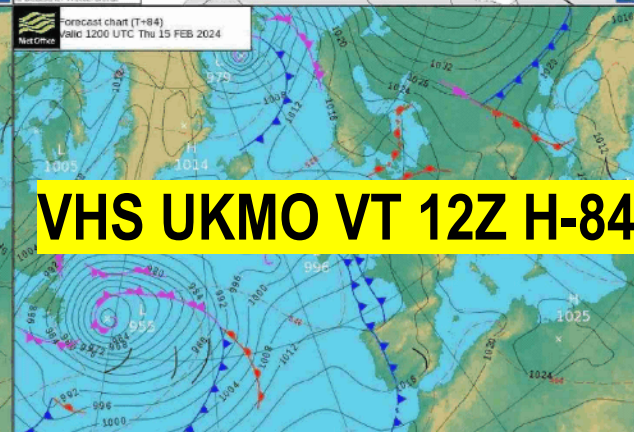
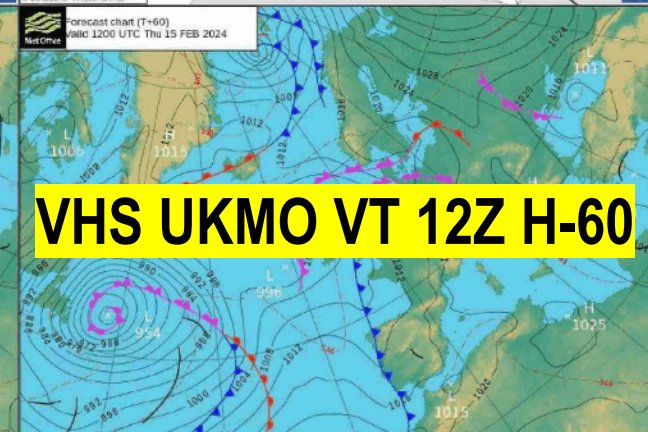
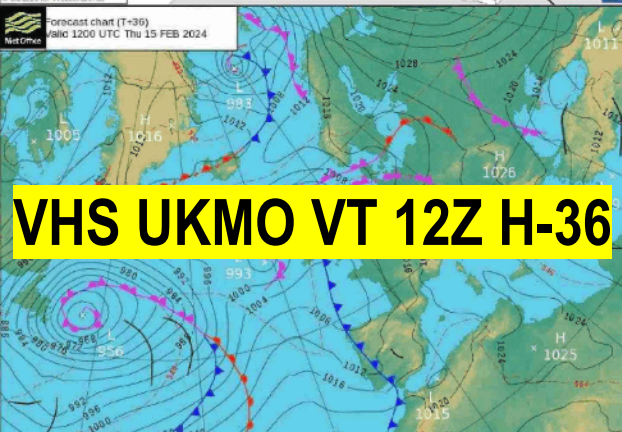
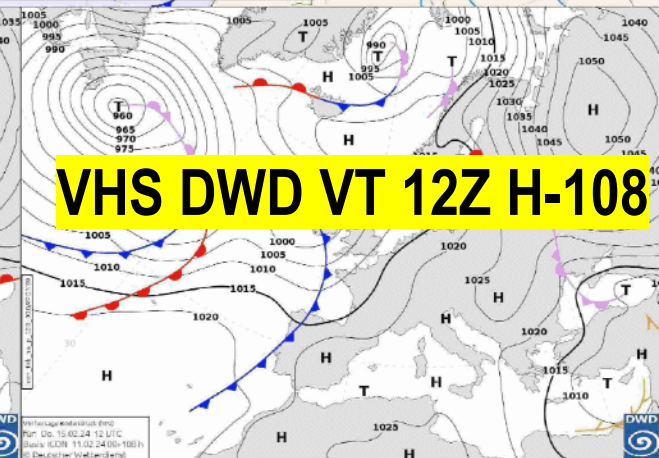
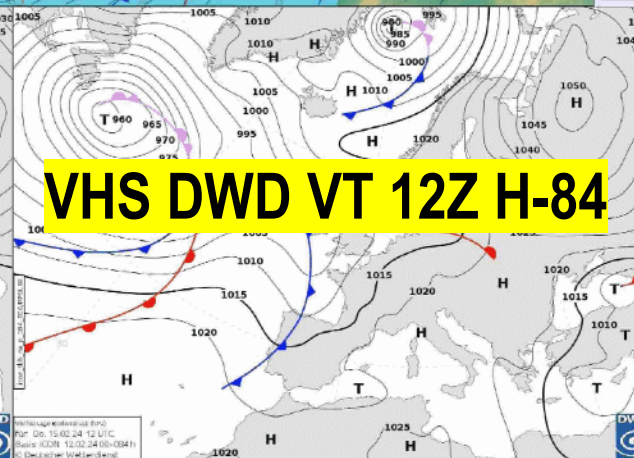
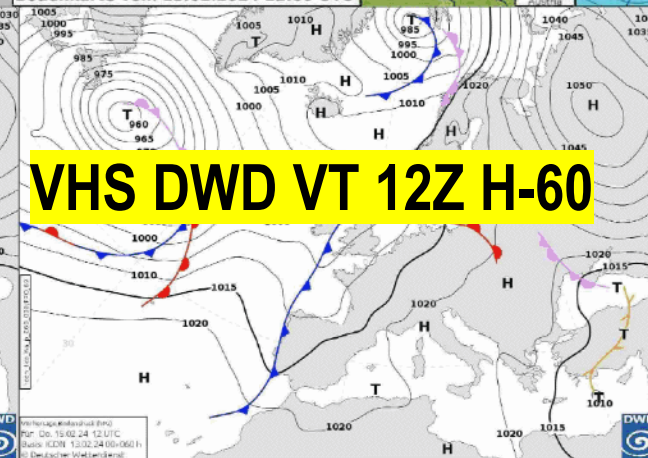
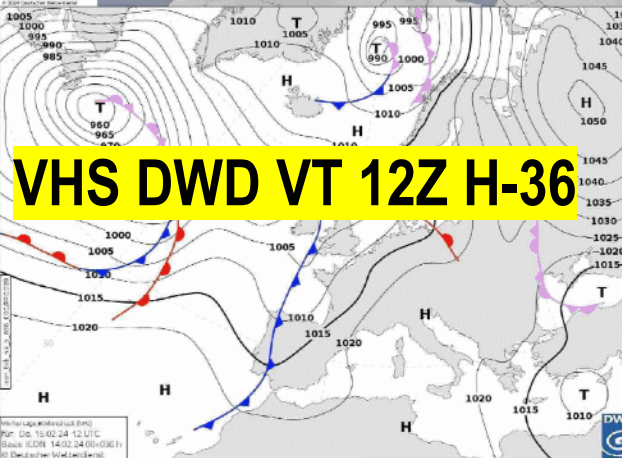
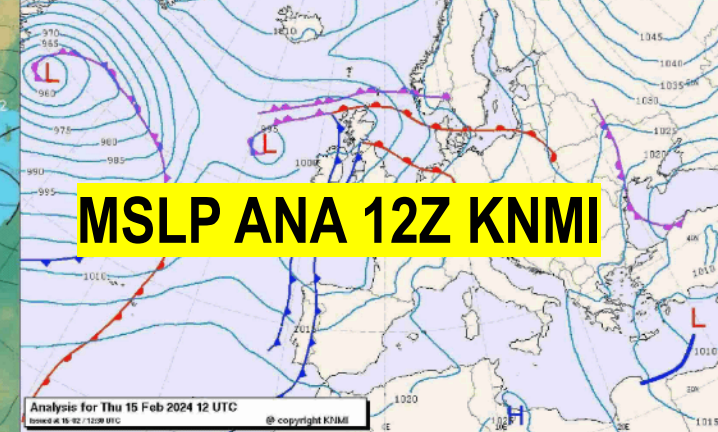
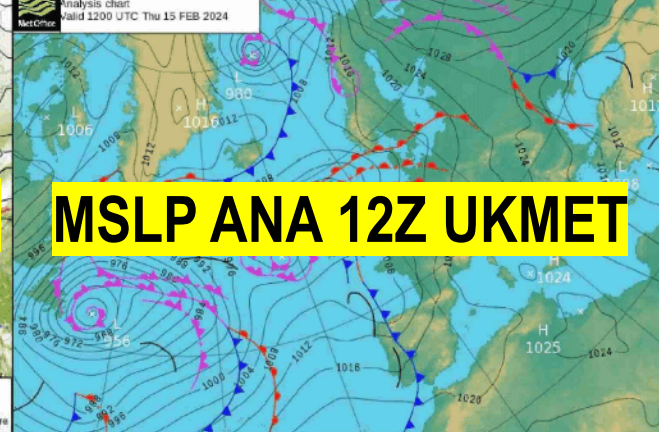
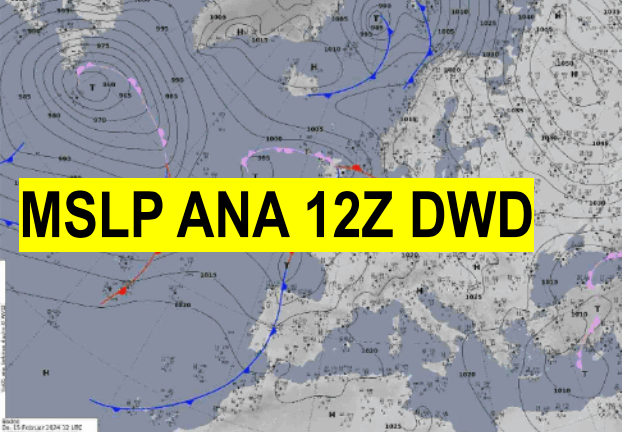


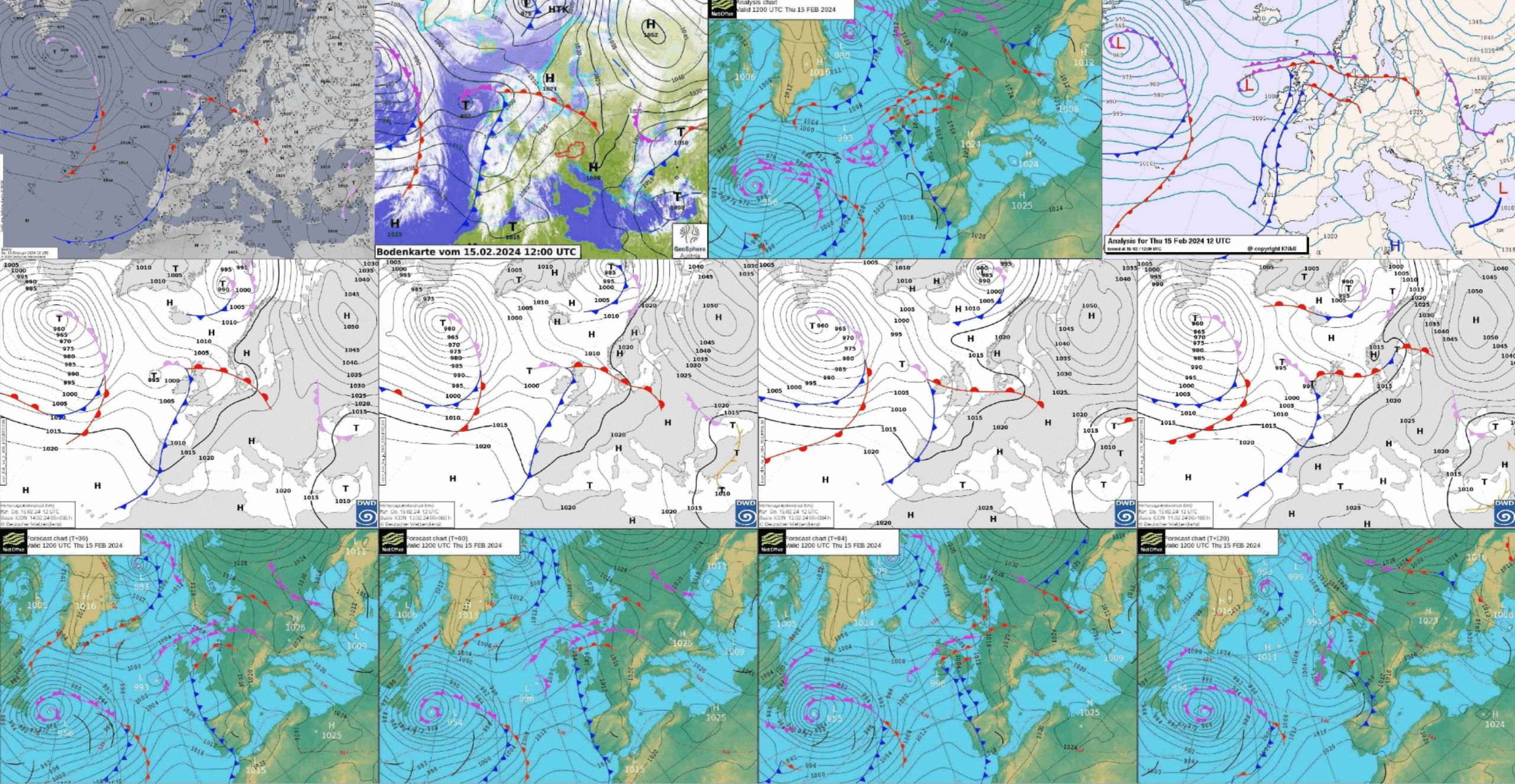
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DWD UKMET HINDCAST







Analyse

**Hindcast
H-012 Std**

**Hindcast
H-024 1 Tag**

**Hindcast
H-036 Std**

**Hindcast
H-048 2 Tage**

**Hindcast
H-060 Std**

**Hindcast
H-072 3 Tage**

**Hindcast
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**Hindcast
H-096 4 Tage**

**Hindcast
H-108 Std**

**Hindcast
H-120 5 Tage**

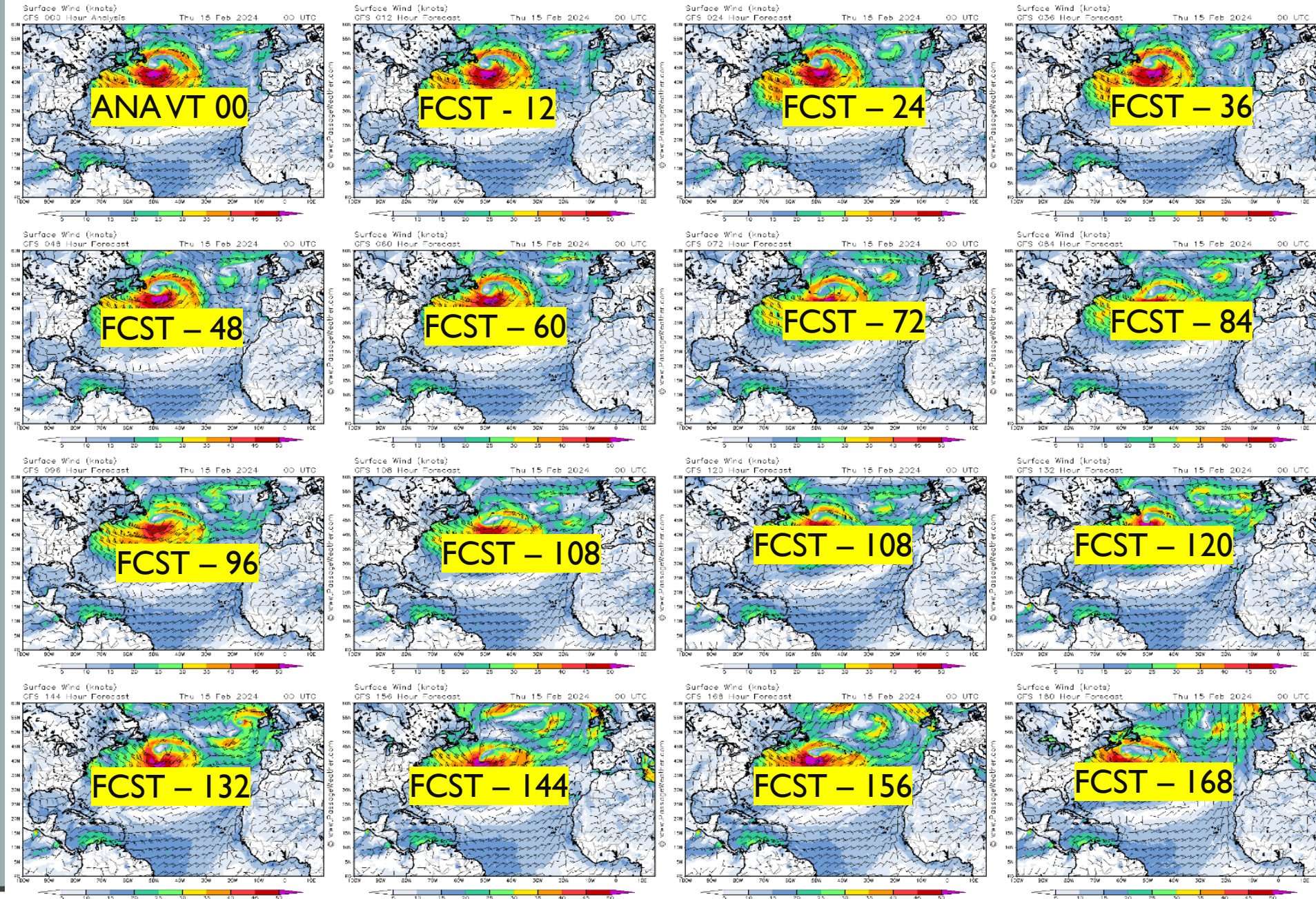
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**Hindcast
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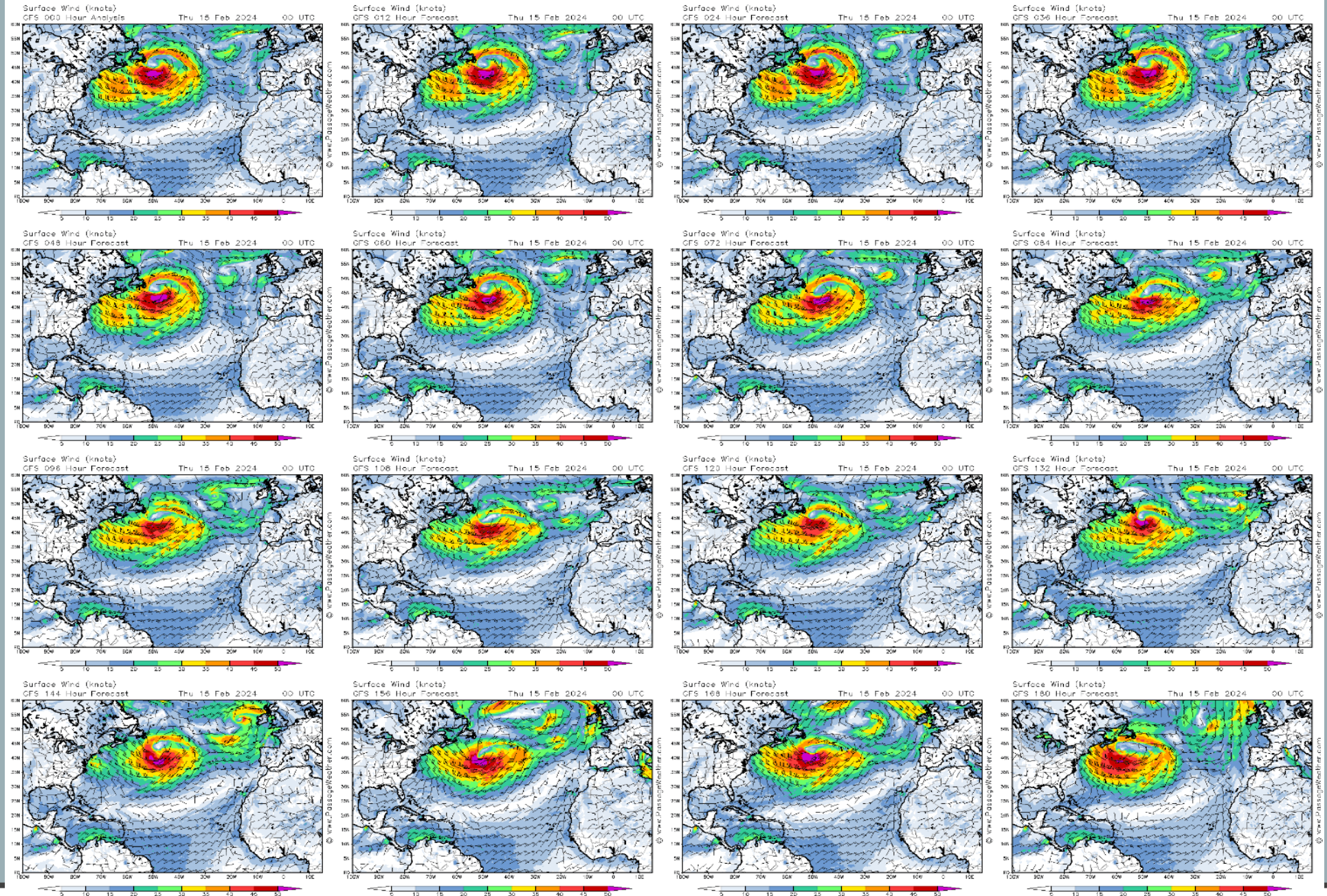
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H-156 Std**

**Hindcast
H-168 1 Woche**

**Hindcast
H-180 Std**



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CONCLUDING REMARKS

- **Basic understanding of Weather ...**
- **... is more and more lost, also due to high-quality products**
- **... is required to judge these products**
- **... helps to anticipate development away from NWP**
- **... helps to get individual experience in judgement of NWP**
- **... helps for an individual interpretation of general forecasts, e.g. to refer it to glider specific properties**
- **... can be considered similar to basic skills of flying which an A380 Captain should have – and HAS! Additional to ECAM...**

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Thank you for your attention !

