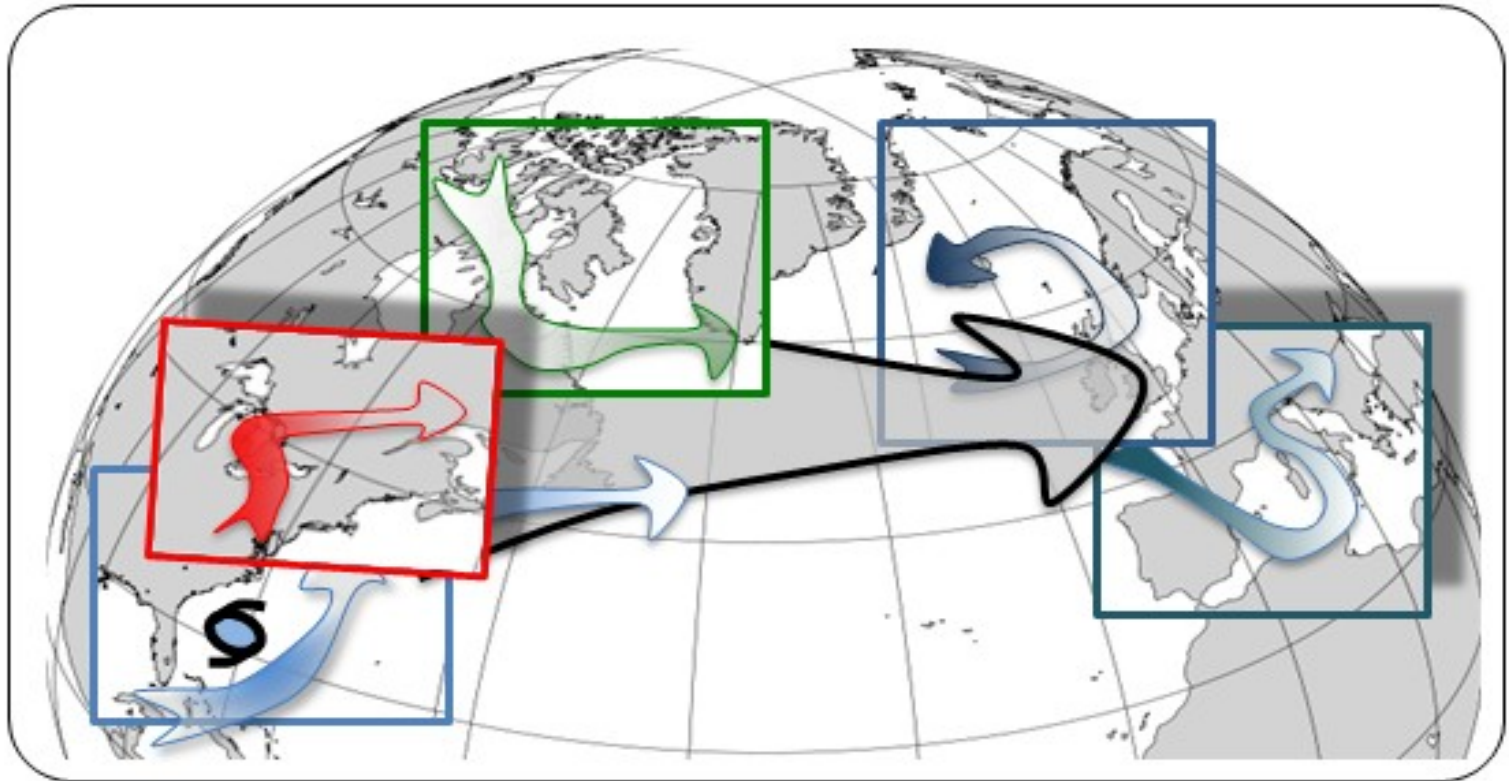


NAWDEX – General Planning Meeting

26 September 2016, Keflavik 11 UTC



NAWDEX – General Planning Meeting

26 September 2016, Keflavik 11 UTC

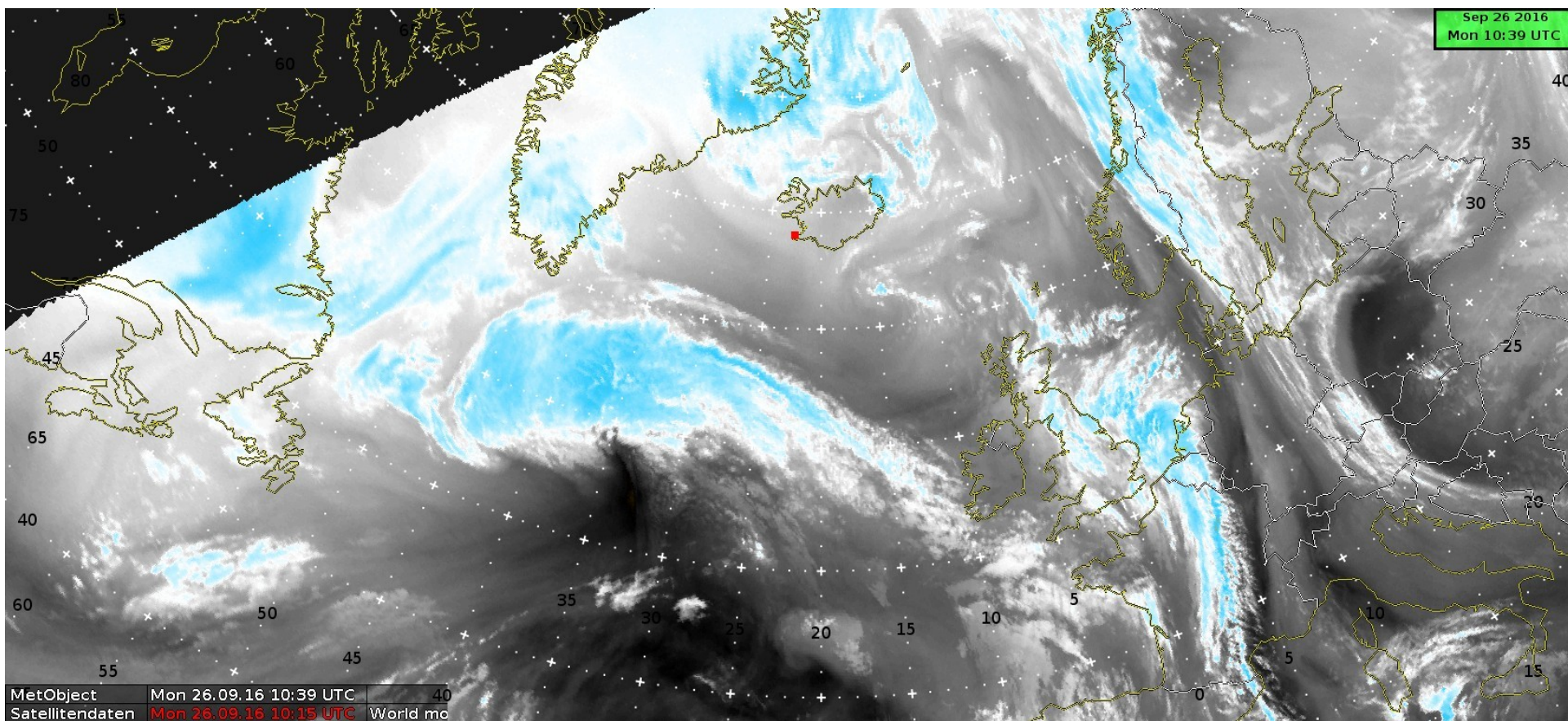
Key issues today

1. Coordinated flights of DLR-Falcon and UK FAAM BAE 146 Tuesday (Andreas)
2. Flight of HALO on Tuesday afternoon (Hanin, Andreas, Christian K.)
3. Outlook: Radiosonde IOP Tue/Wed for gravity waves generated by jet
4. Additional Radiosondes requested (Tue-Sat) for high impact weather event over Northern Europe (Thu-Sat)

NAWDEX – General Planning Meeting

25 September 2016, Keflavik 11 UTC

1. Current HALO flight update
2. Aircraft status report by FX-Operations
3. Instrument status report by Instrument Manager
4. Short weather summary: information about flight options for the next days and update for planning for the next day with the latest forecast
5. Discussion flights on Tuesday (Halo, Falcon, FAAM)
6. Report of Ground-Based Observation coordinator
7. Gravity wave IOP on Wednesday
8. Coordination with other aircraft (Input from other groups)

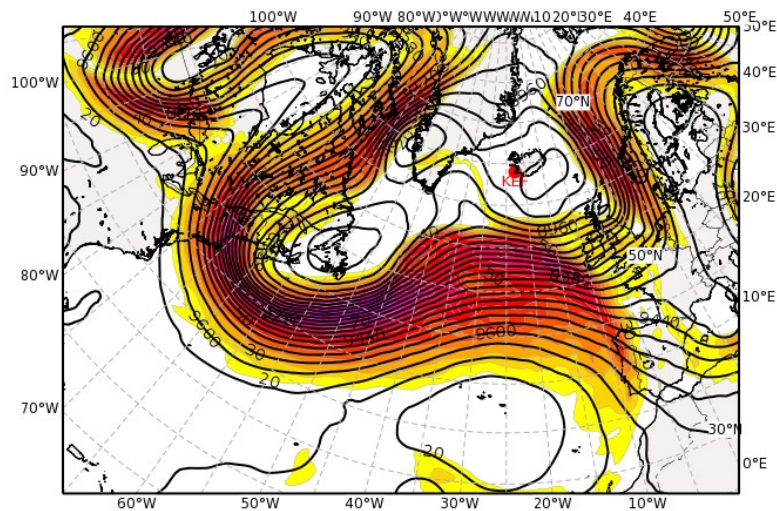


Sep 26 2016
Mon 10:39 UTC

Analysis – 26 Sep 2016, 00 UTC

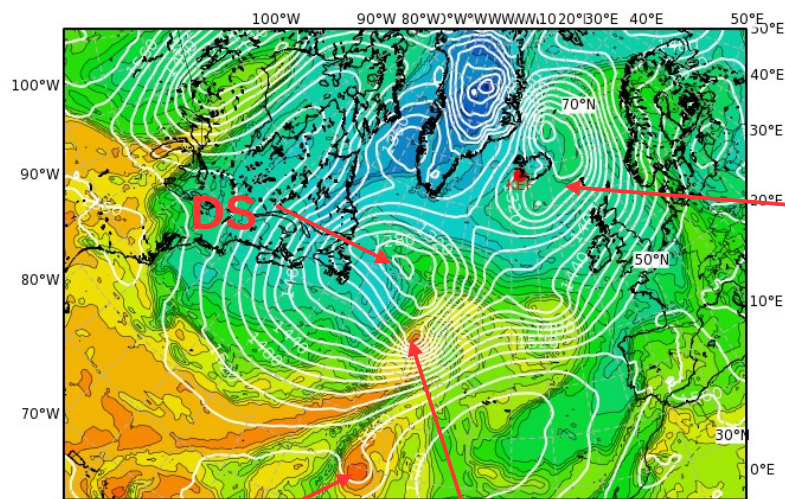
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa

Valid: Mon, 26 Sep 2016, 00 UTC (step 000 h from Mon, 26 Sep 2016, 00 UTC)



Equivalent Potential Temperature (degC) & Streamlines at 850 hPa

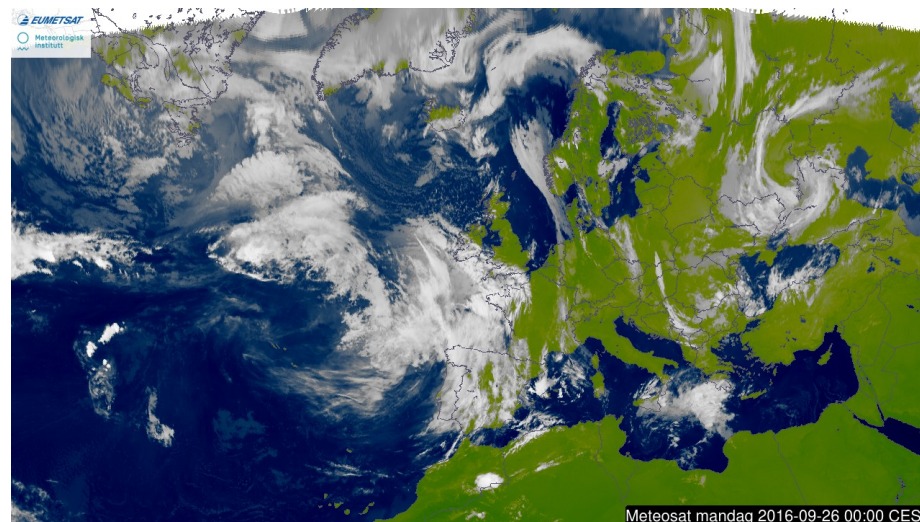
Valid: Mon, 26 Sep 2016, 00 UTC (step 000 h from Mon, 26 Sep 2016, 00 UTC)



Lisa

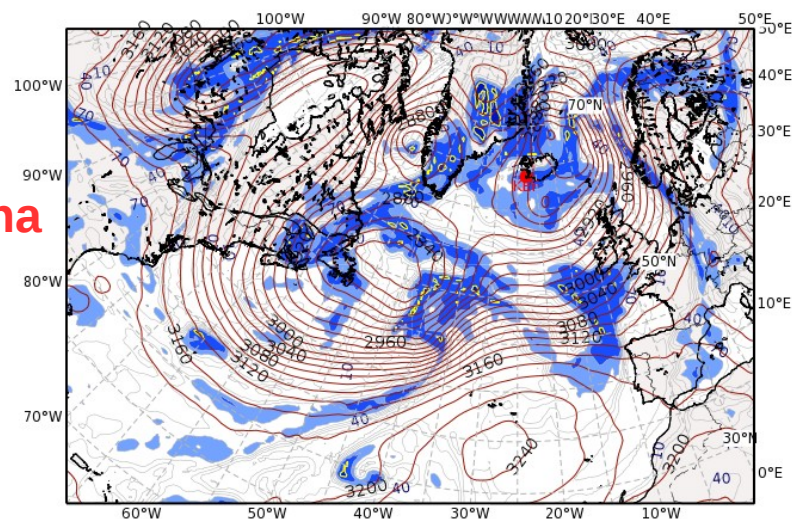
Karl

Z300, SAT
THE850, RH700



Relative Humidity (%) and Z (m) at 700 hPa

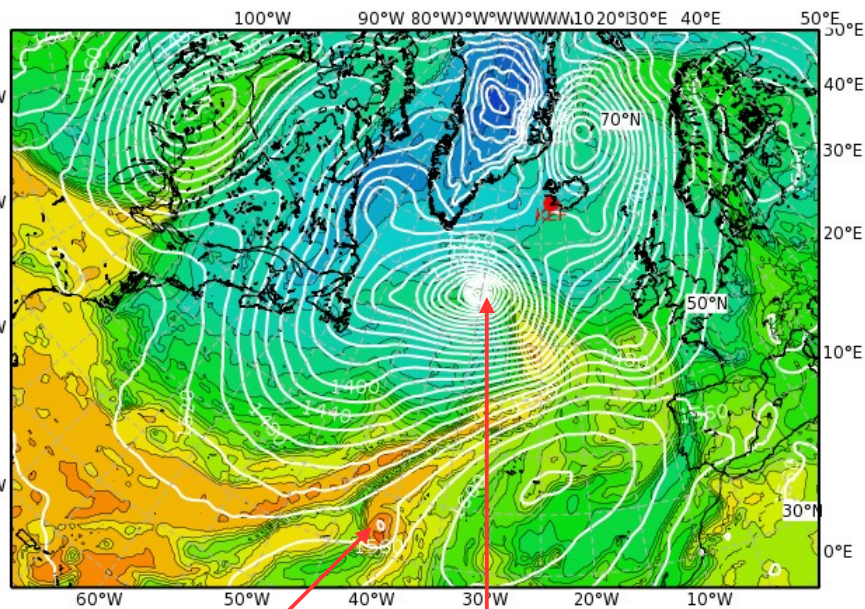
Valid: Mon, 26 Sep 2016, 00 UTC (step 000 h from Mon, 26 Sep 2016, 00 UTC)



Forecast for Mon, 26 Sep 2016 12 UTC

THE850, Z300 BT26/00Z

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa
Valid: Mon, 26 Sep 2016, 12 UTC (step 012 h from Mon, 26 Sep 2016, 00 UTC)



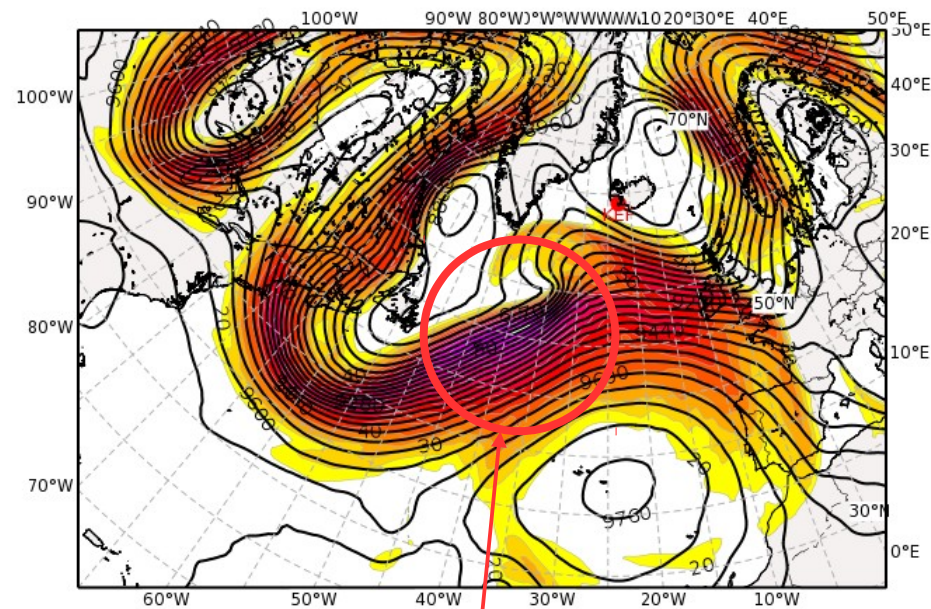
Lisa

ex-Karl

Cloudiness Greenland:



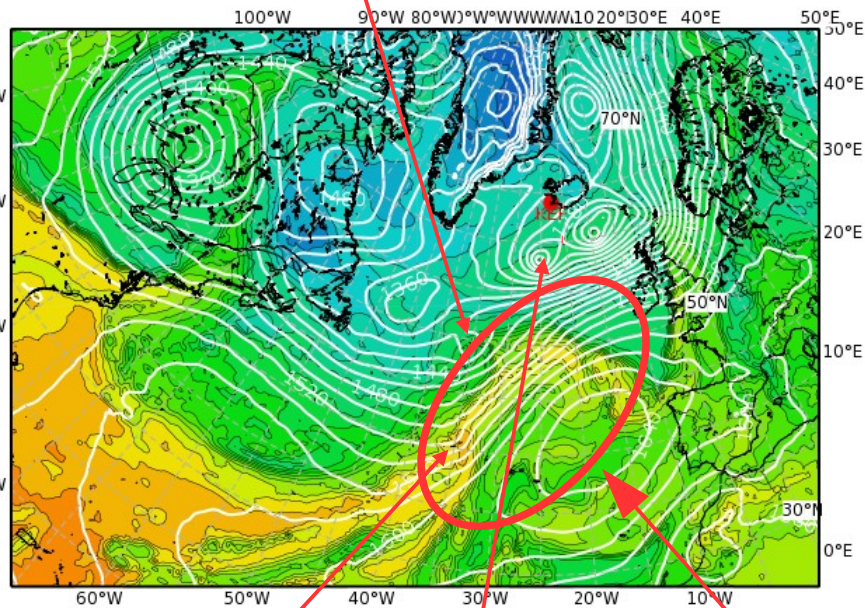
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Mon, 26 Sep 2016, 12 UTC (step 012 h from Mon, 26 Sep 2016, 00 UTC)



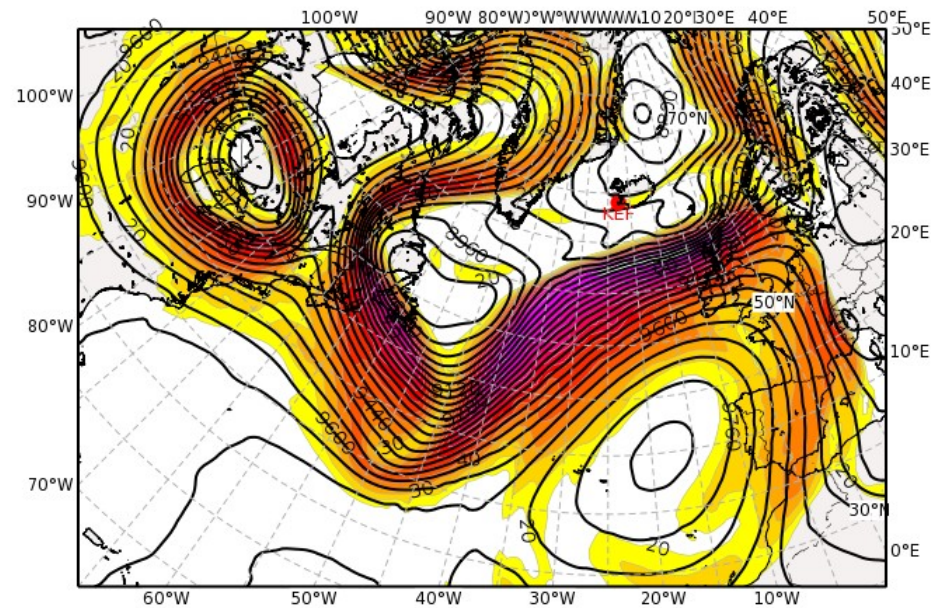
Strong jet (> 85 m/s)

New cyclone

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa
Valid: Tue, 27 Sep 2016, 12 UTC (step 036 h from Mon, 26 Sep 2016, 00 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Tue, 27 Sep 2016, 12 UTC (step 036 h from Mon, 26 Sep 2016, 00 UTC)



Lisa

ex-Karl

Strong moisture transport

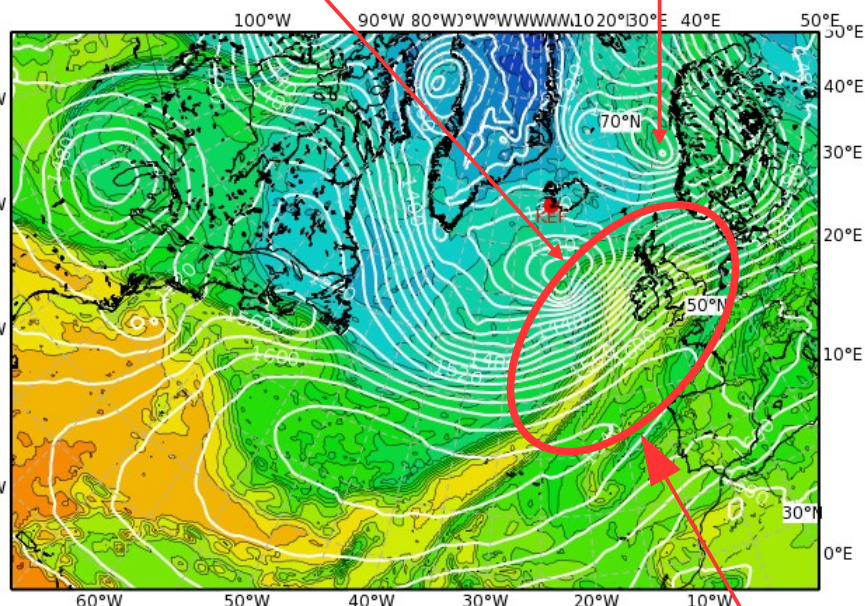
Cloudiness Greenland:



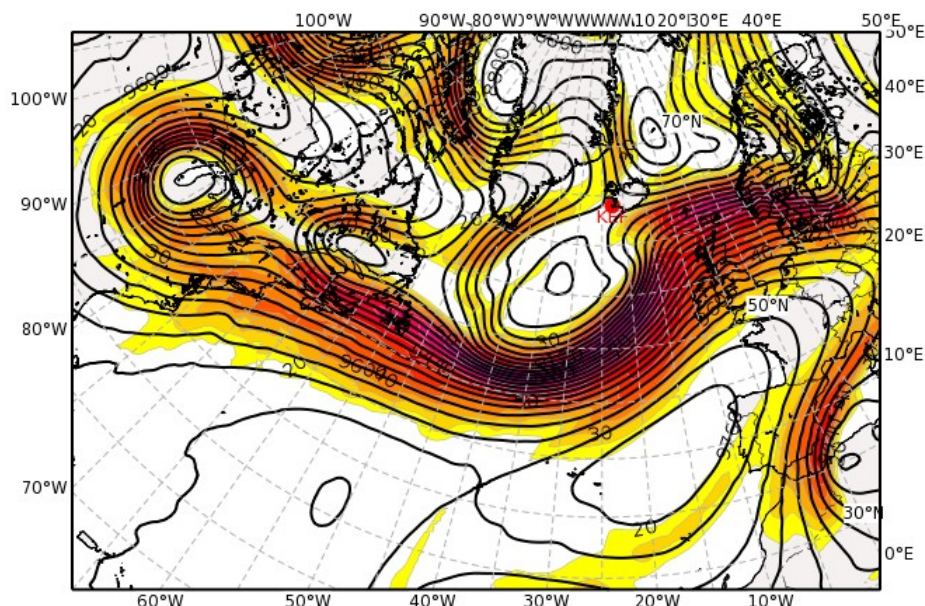
New cyclone

ex-Karl

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa
Valid: Wed, 28 Sep 2016, 12 UTC (step 060 h from Mon, 26 Sep 2016, 00 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Wed, 28 Sep 2016, 12 UTC (step 060 h from Mon, 26 Sep 2016, 00 UTC)

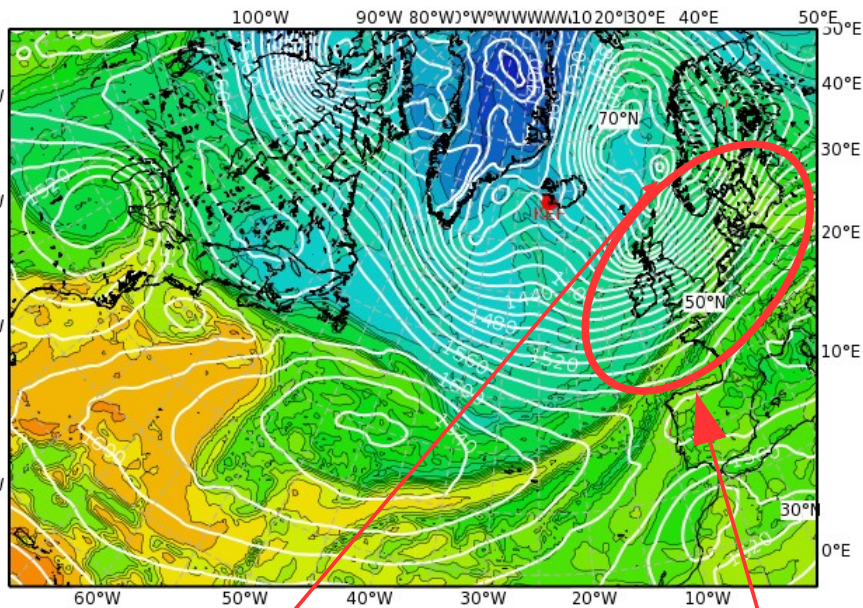


Strong moisture transport

Cloudiness Greenland:



Equivalent Potential Temperature (degC) & Streamlines at 850 hPa
Valid: Thu, 29 Sep 2016, 12 UTC (step 084 h from Mon, 26 Sep 2016, 00 UTC)



New cyclone

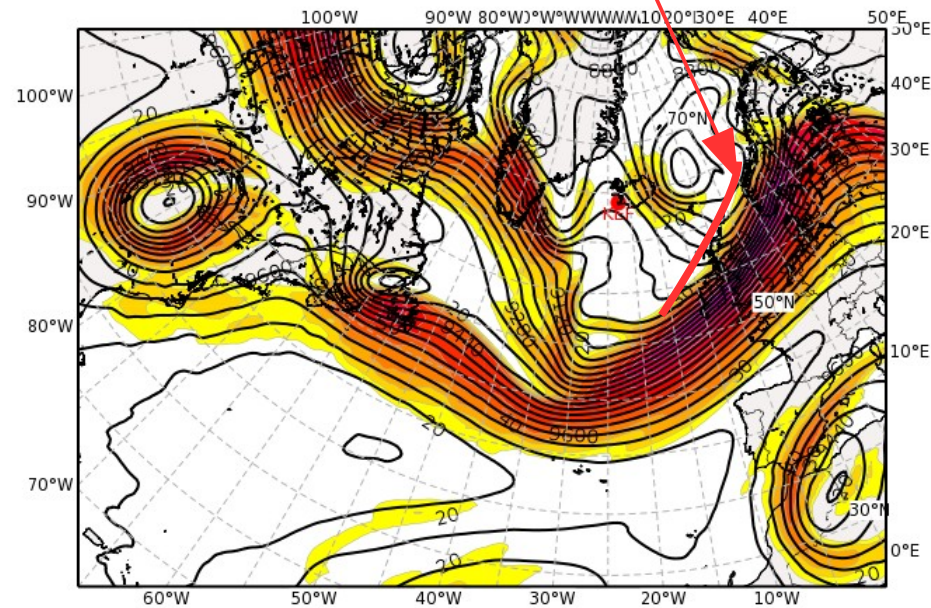
Strong moisture transport

Cloudiness Greenland:



Upper-level trough

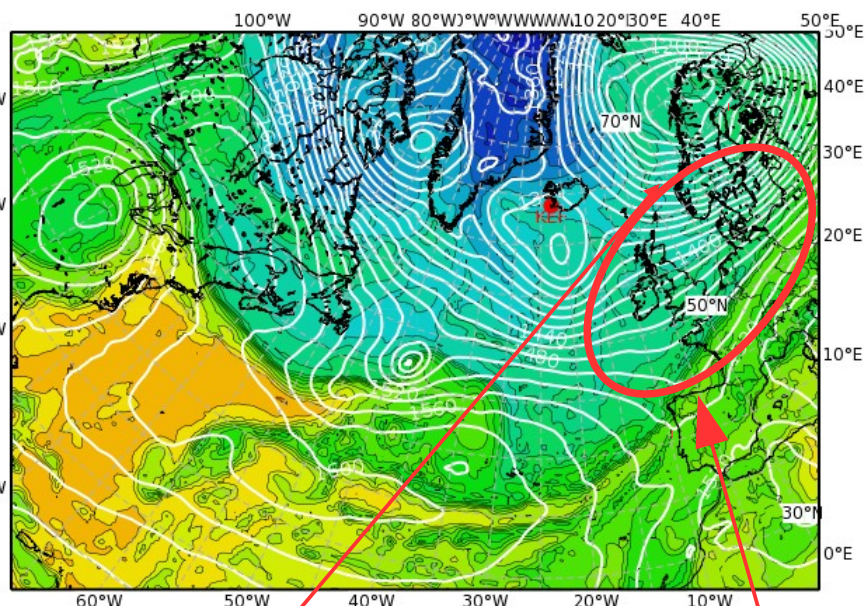
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Thu, 29 Sep 2016, 12 UTC (step 084 h from Mon, 26 Sep 2016, 00 UTC)



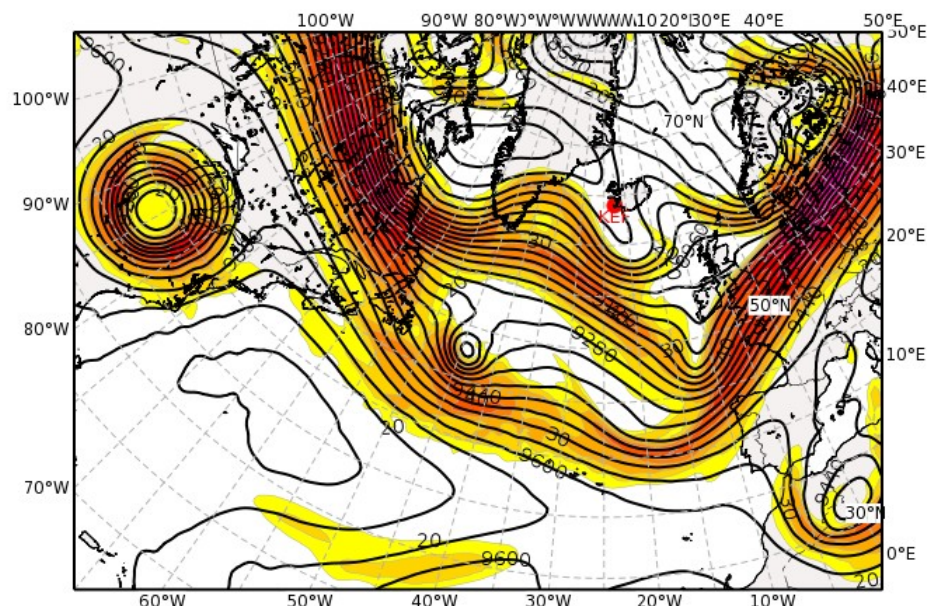
Forecast for Fri, 30 Sep 2016 12 UTC

THE850, Z300 BT26/00Z

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa
Valid: Fri, 30 Sep 2016, 12 UTC (step 108 h from Mon, 26 Sep 2016, 00 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Fri, 30 Sep 2016, 12 UTC (step 108 h from Mon, 26 Sep 2016, 00 UTC)



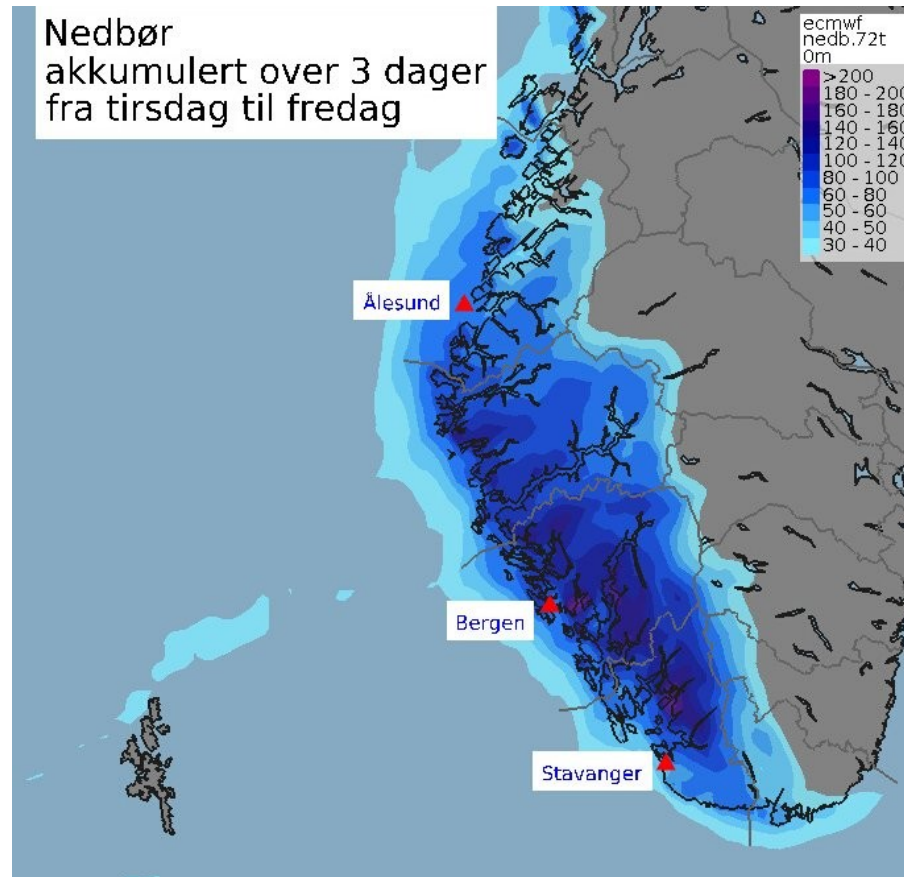
New cyclone

Strong moisture transport

Cloudiness Greenland:



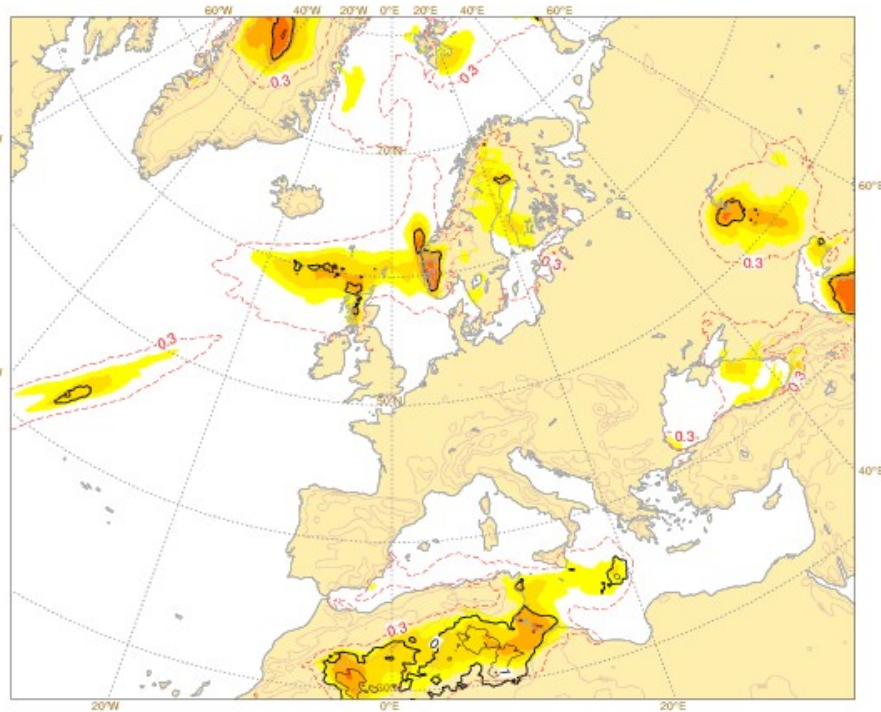
Potential for heavy precipitation over Scandinavia (Tue-Fri)



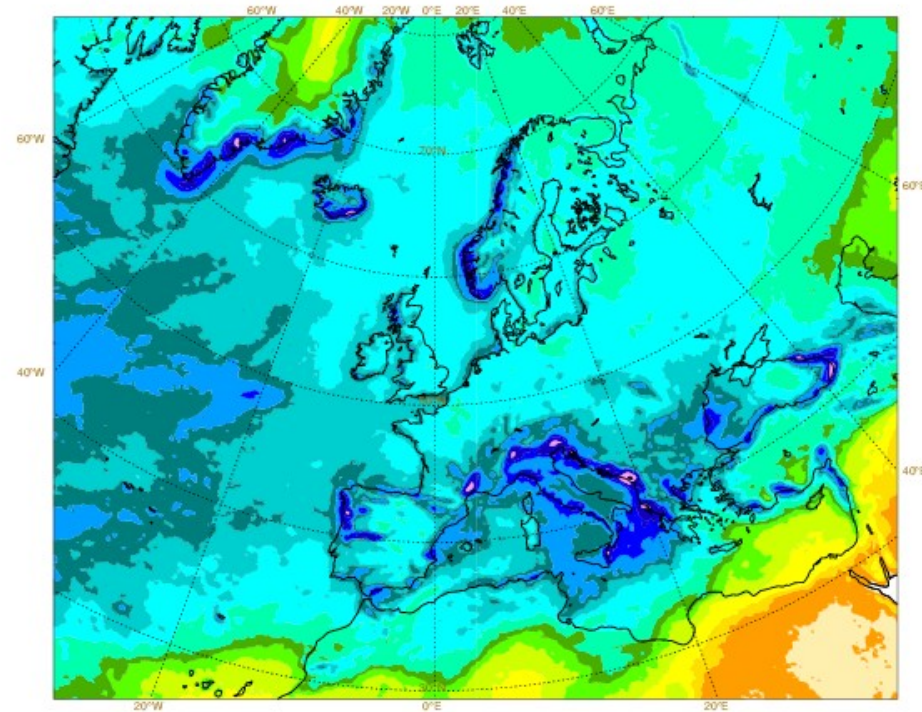
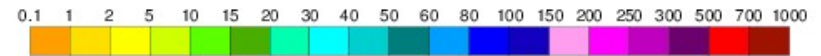
Up to 180 mm precipitation in 72h!

Potential for heavy precipitation over Scandinavia (Tue-Fri)

Mon 26 Sep 2016 00UTC ©ECMWF t+24-96h VT: Tue 27 Sep 2016 00UTC - Fri 30 Sep 2016 00UTC
Extreme forecast index and Shift of Tails (black contours 0,1,2,5,8) for total precipitation

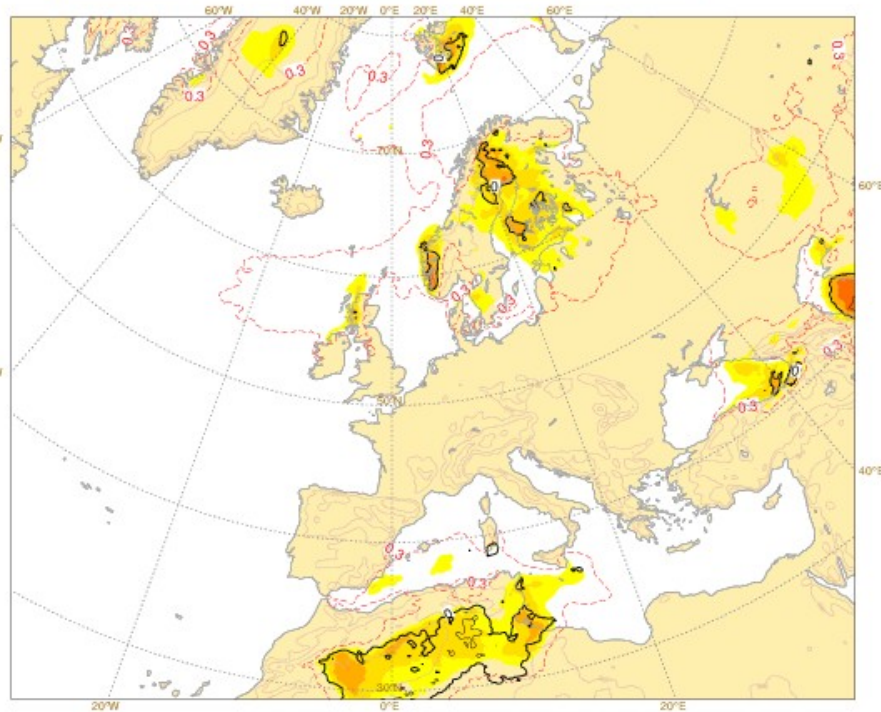


Thu 22 Sep 2016 00UTC ©ECMWF VT: Tue 27 Sep 2016 00UTC - Fri 30 Sep 2016 00UTC 24-96h
total precipitation (in mm) Model climate Q99 (one in 100 occasions realises more than value shown)

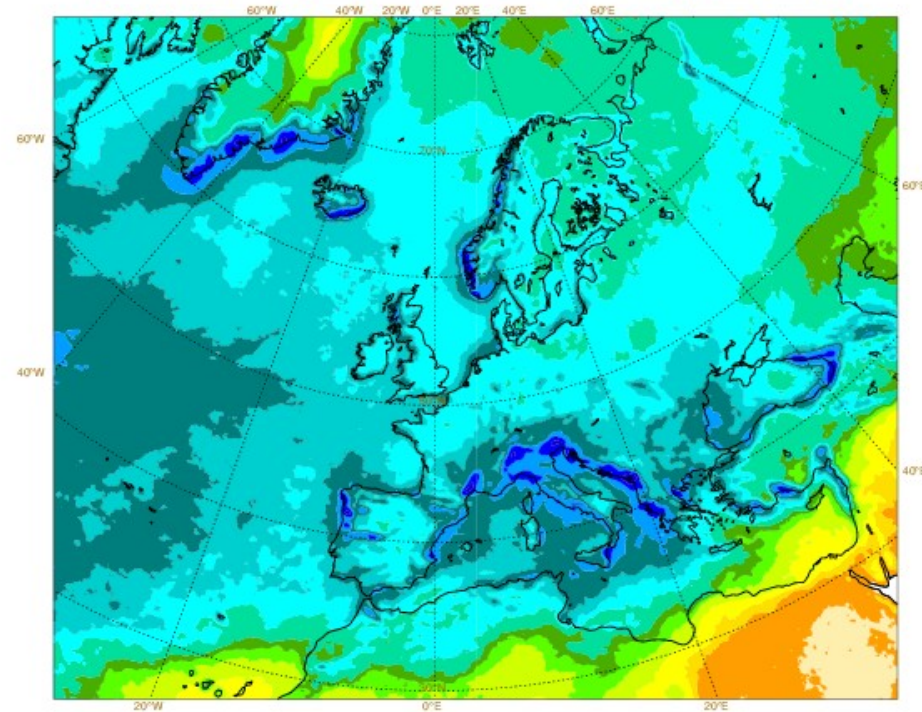
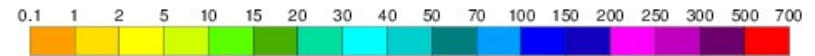


Potential for heavy precipitation over Scandinavia (Wed-Sat)

Mon 26 Sep 2016 00UTC ©ECMWF t+48-120h VT: Wed 28 Sep 2016 00UTC - Sat 01 Oct 2016 00UTC
Extreme forecast index and Shift of Tails (black contours 0,1,2,5,8) for total precipitation

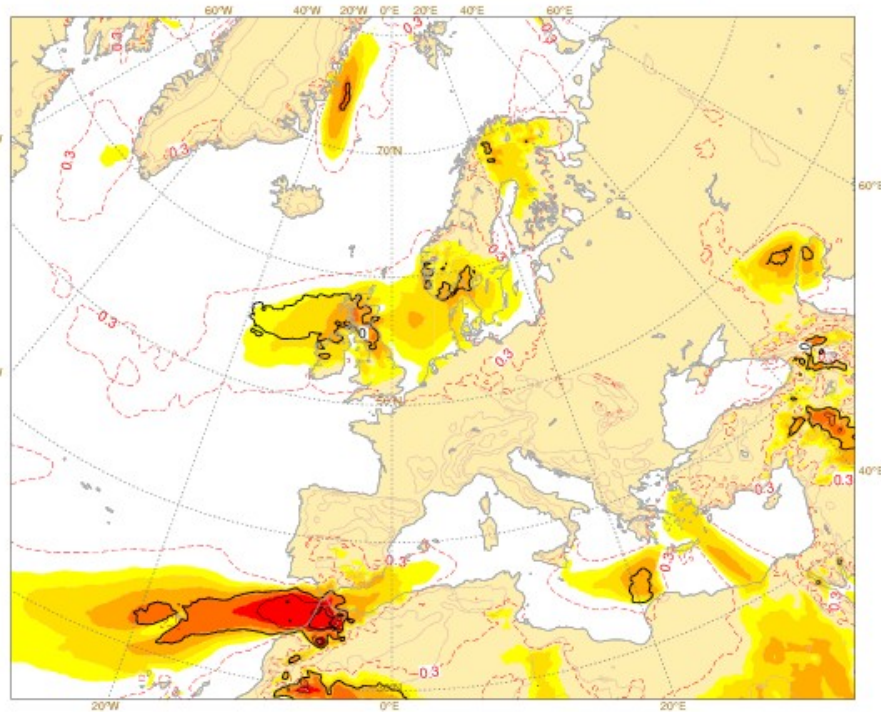


Thu 22 Sep 2016 00UTC ©ECMWF VT: Wed 28 Sep 2016 00UTC - Sat 01 Oct 2016 00UTC 48-120h
total precipitation (in mm) Model climate Q99 (one in 100 occasions realises more than value shown)

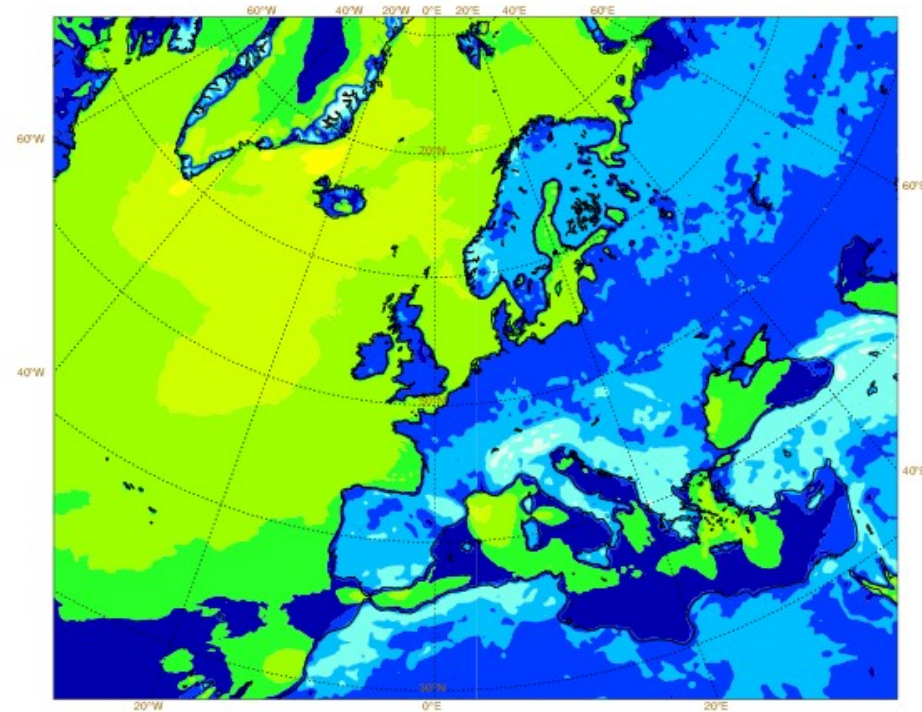
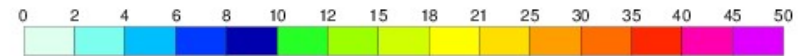


Potential for strong winds over Northern Europe (Tue-Fri)

Mon 26 Sep 2016 00UTC ©ECMWF t+24-96h VT: Tue 27 Sep 2016 00UTC - Fri 30 Sep 2016 00UTC
Extreme forecast index and Shift of Tails (black contours 0,1,2,5,8) for 10m wind speed

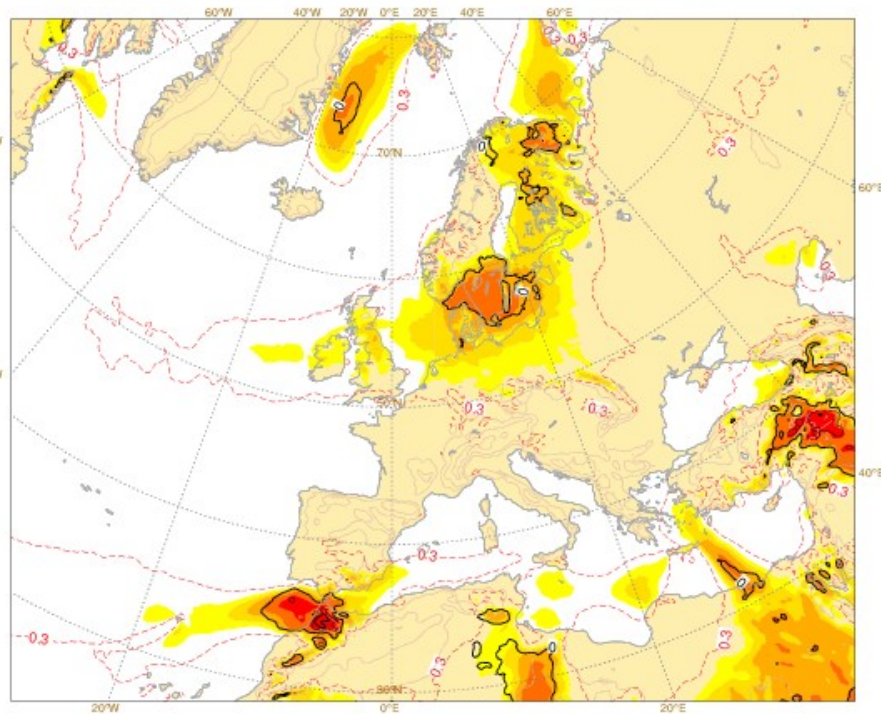


Thu 22 Sep 2016 00UTC ©ECMWF VT: Tue 27 Sep 2016 00UTC - Fri 30 Sep 2016 00UTC 24-96h
10m wind speed (in m/s) Model climate Q99 (one in 100 occasions realises more than value shown)

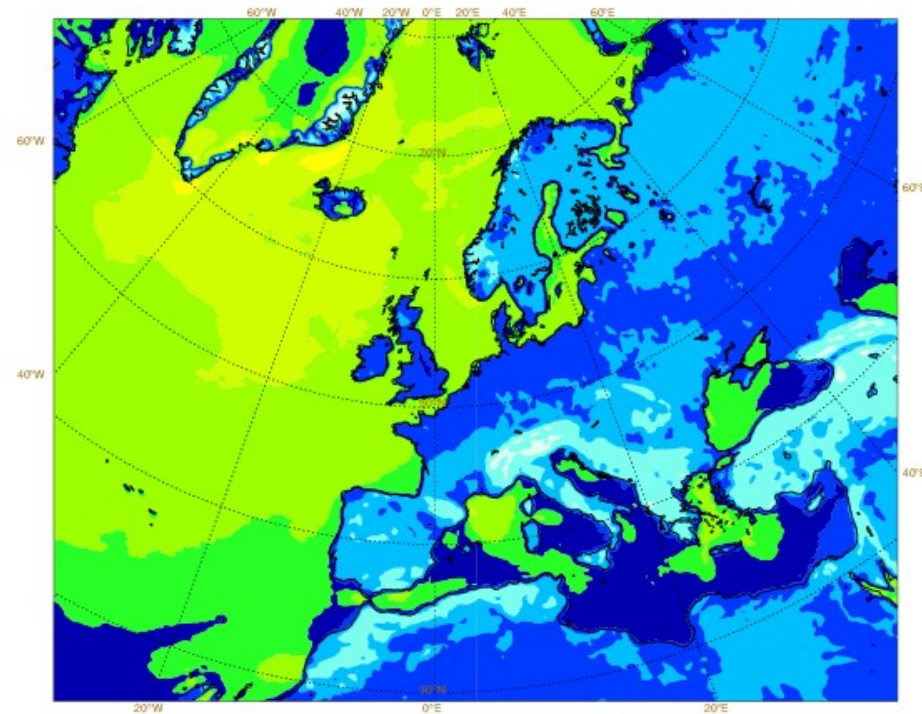
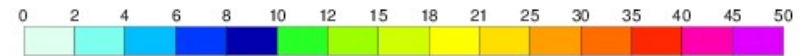


Potential for strong winds over Northern Europe (Wed-Sat)

Mon 26 Sep 2016 00UTC ©ECMWF t+48-120h VT: Wed 28 Sep 2016 00UTC - Sat 01 Oct 2016 00UTC
Extreme forecast index and Shift of Tails (black contours 0,1,2,5,8) for 10m wind speed



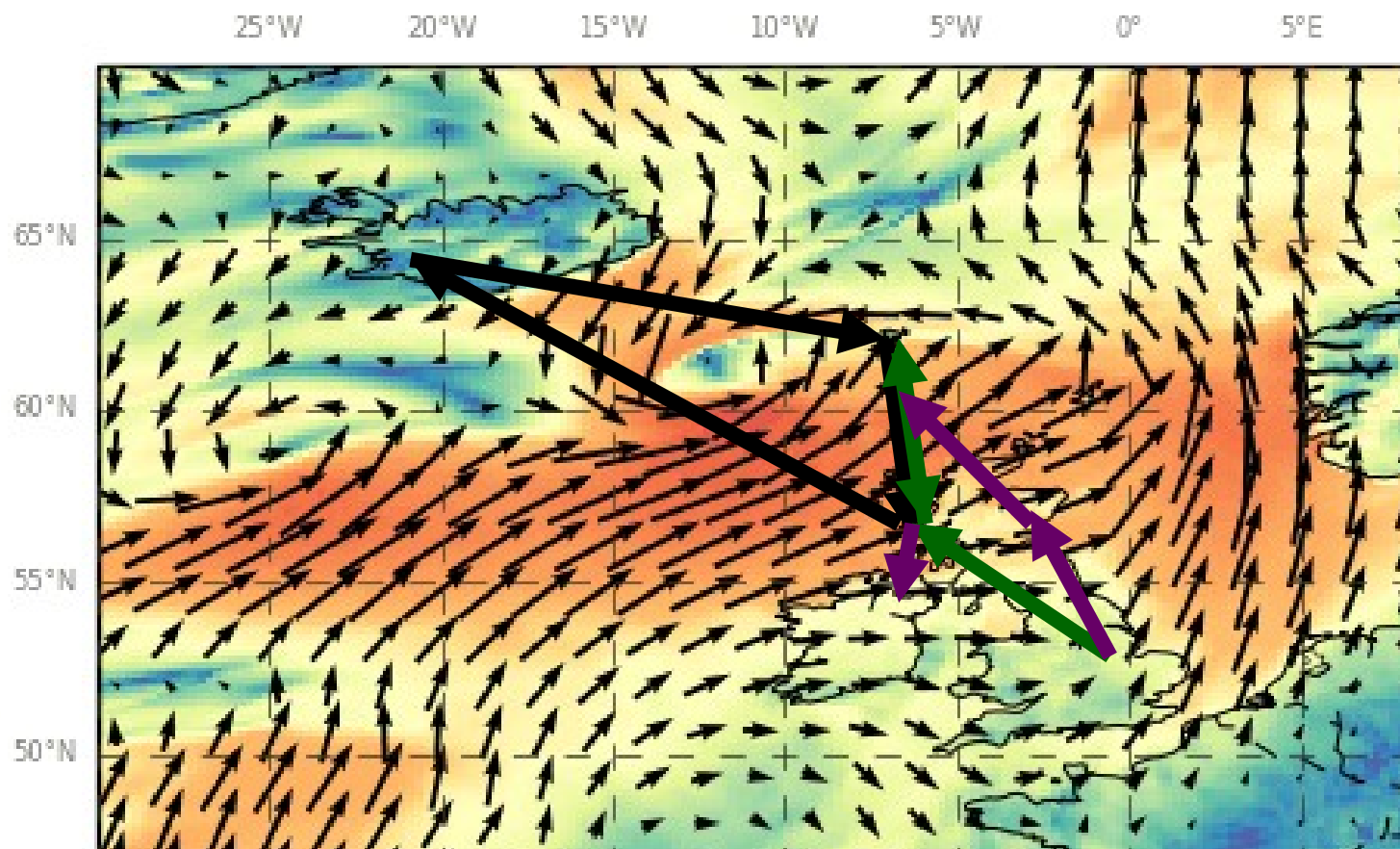
Thu 22 Sep 2016 00UTC ©ECMWF VT: Wed 28 Sep 2016 00UTC - Sat 01 Oct 2016 00UTC 48-120h
10m wind speed (in m/s) Model climate Q99 (one in 100 occasions realises more than value shown)



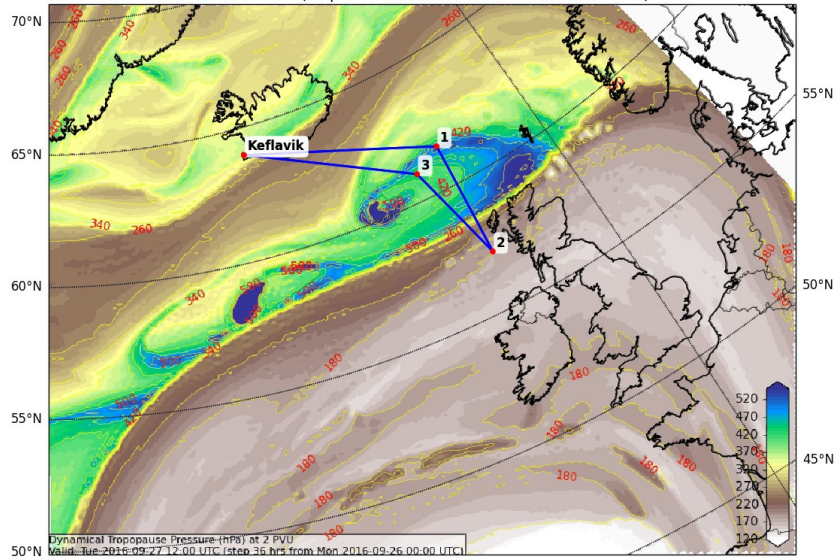
Tuesday Mission (DLR-Falcon, FAAM)



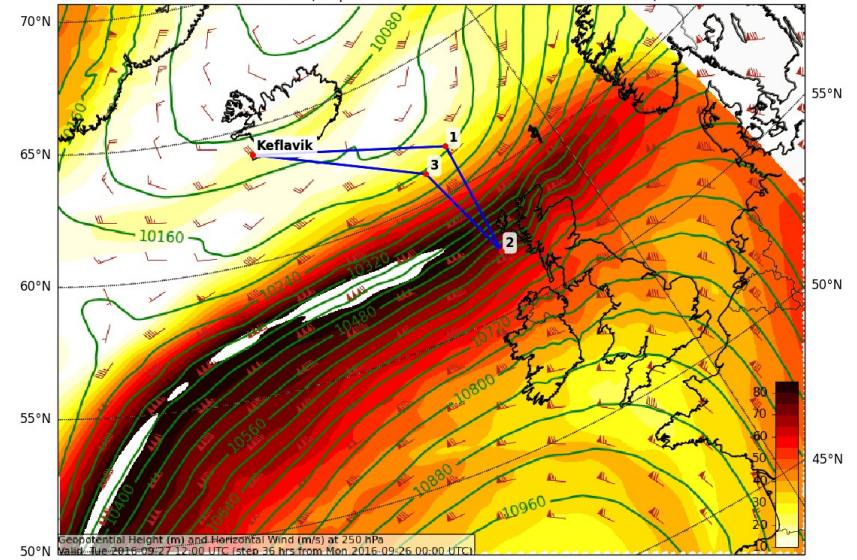
Met Office Oper. Global: Wind speed :
2016/09/27 14Z T+38 from



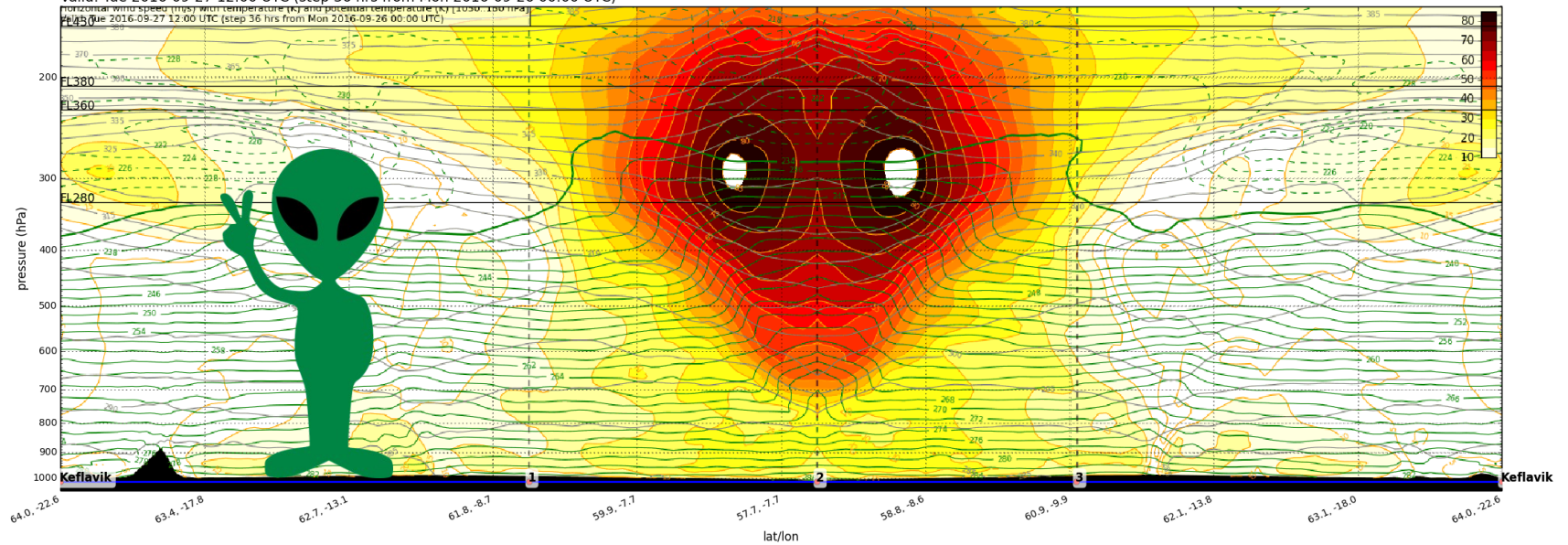
Dynamical Tropopause (Pressure (hPa)) at 2000 (10^{-3} PVU)
Valid: Tue 2016-09-27 12:00 UTC (step 36 hrs from Mon 2016-09-26 00:00 UTC)

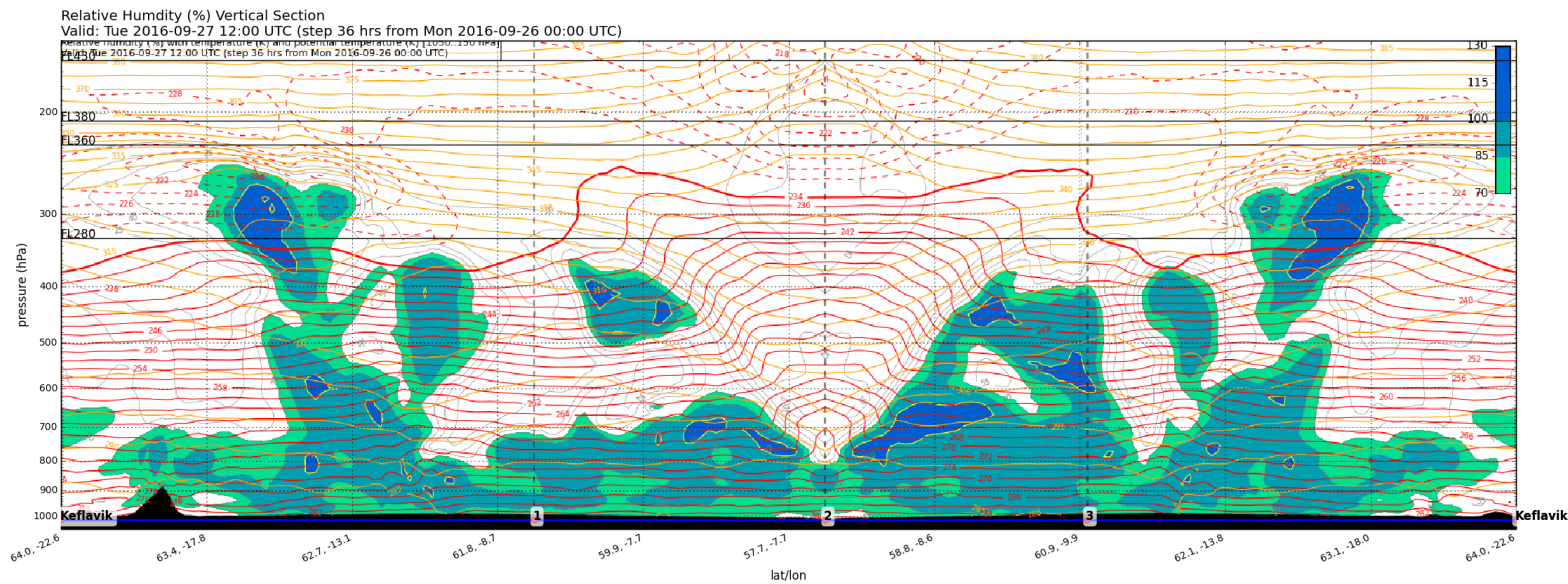
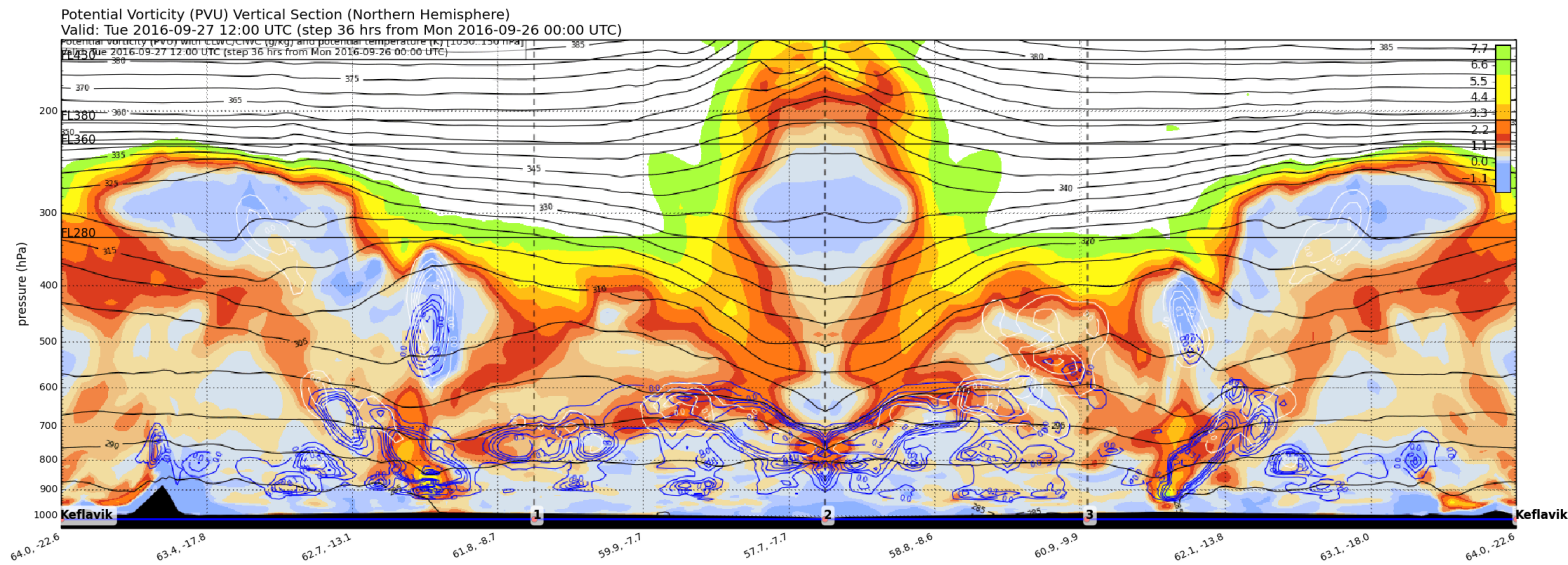


Geopotential Height (m) and Horizontal Wind (m/s) (Wind Speed 10-85 m/s) at 250 (hPa)
Valid: Tue 2016-09-27 12:00 UTC (step 36 hrs from Mon 2016-09-26 00:00 UTC)



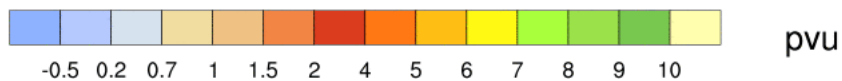
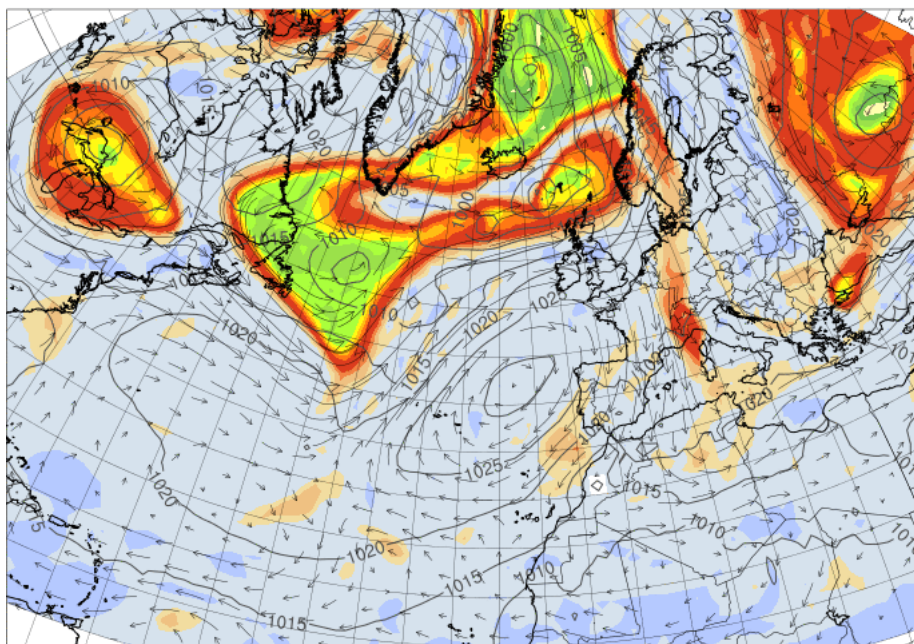
Horizontal Wind (m/s) Vertical Section
Valid: Tue 2016-09-27 12:00 UTC (step 36 hrs from Mon 2016-09-26 00:00 UTC)
Horizontal wind speed (m/s) and potential temperature (K) (1050 - 190 hPa)
Valid: Tue 2016-09-27 12:00 UTC (step 36 hrs from Mon 2016-09-26 00:00 UTC)



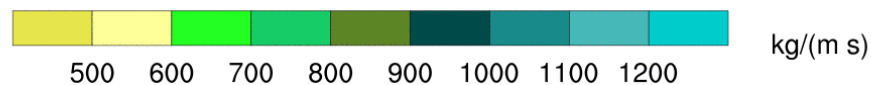
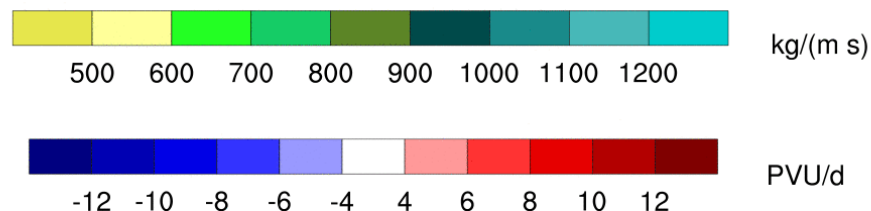
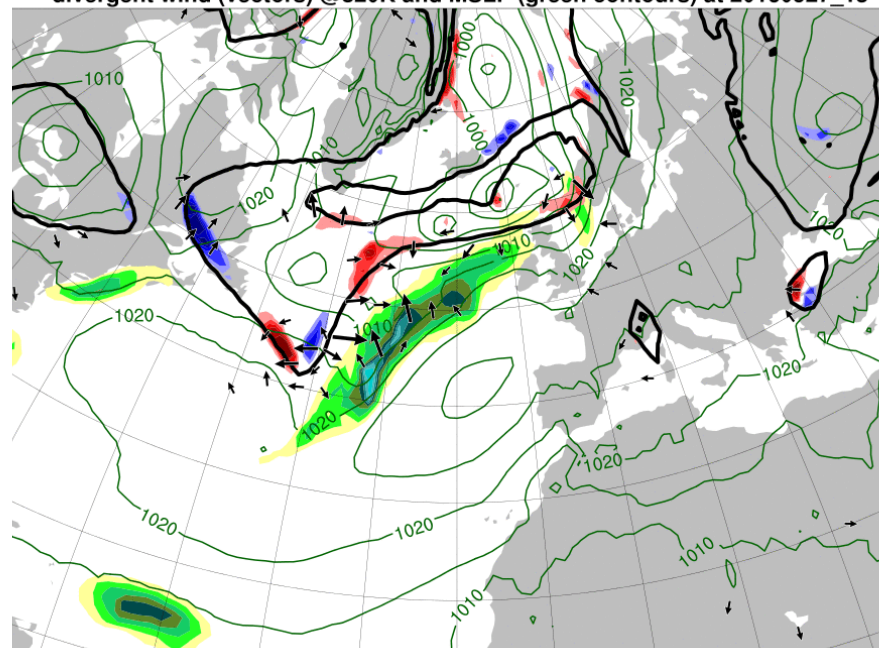


Tuesday Mission (HALO)

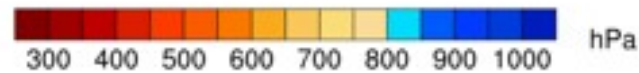
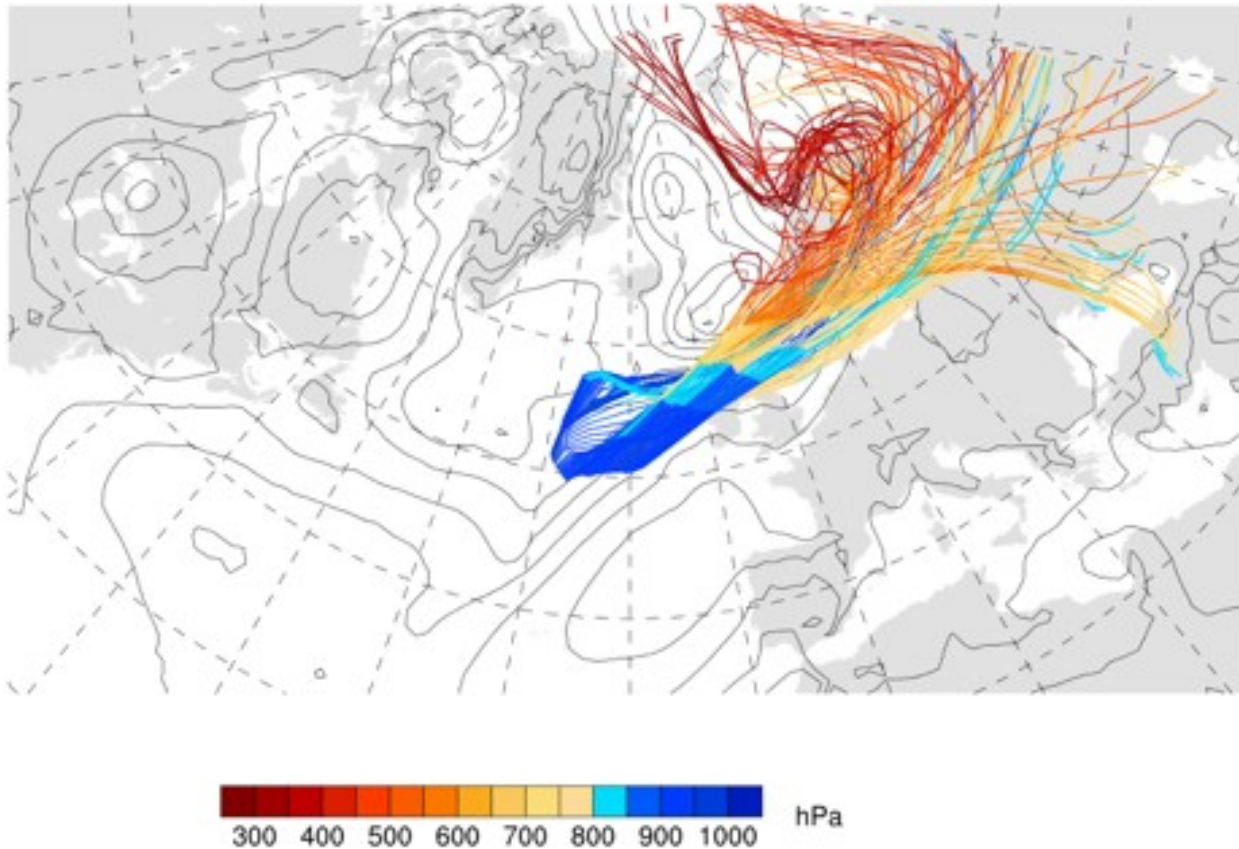
PV@320K at 20160927_15



2 PVU (black contour), PV advection through divergent wind (shading), divergent wind (vectors) @320K and MSLP (green contours) at 20160927_15

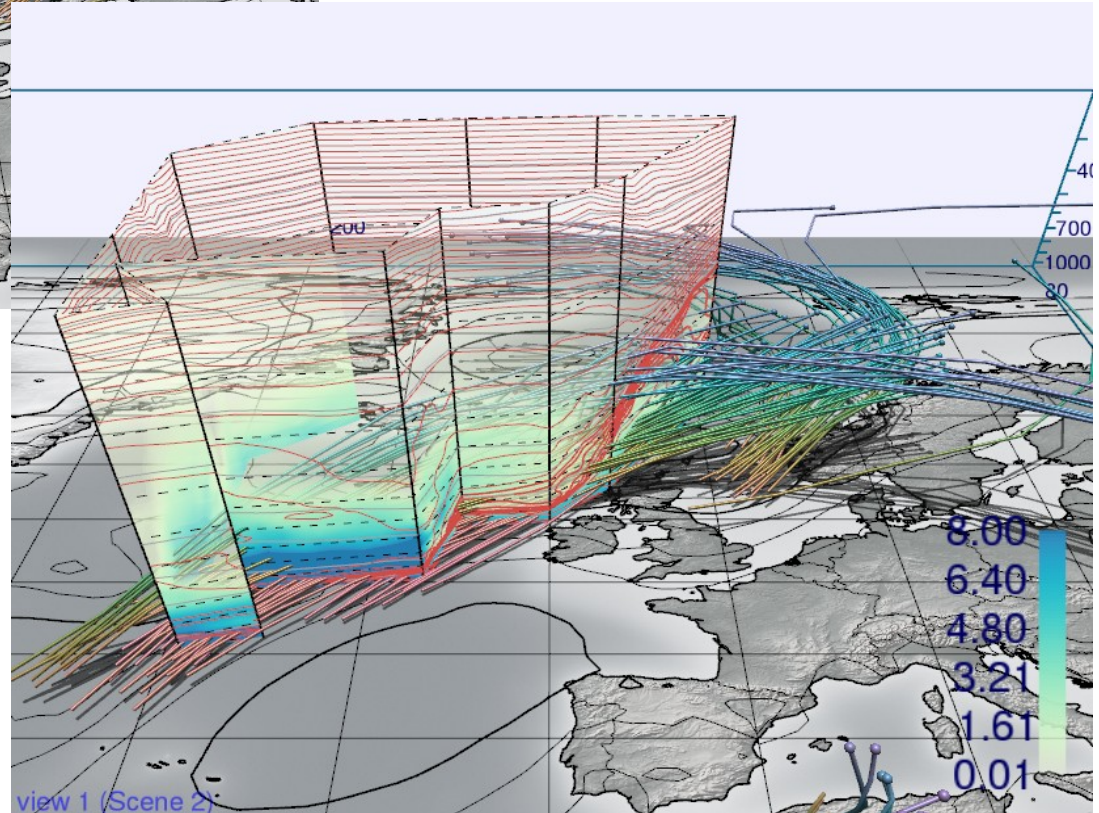
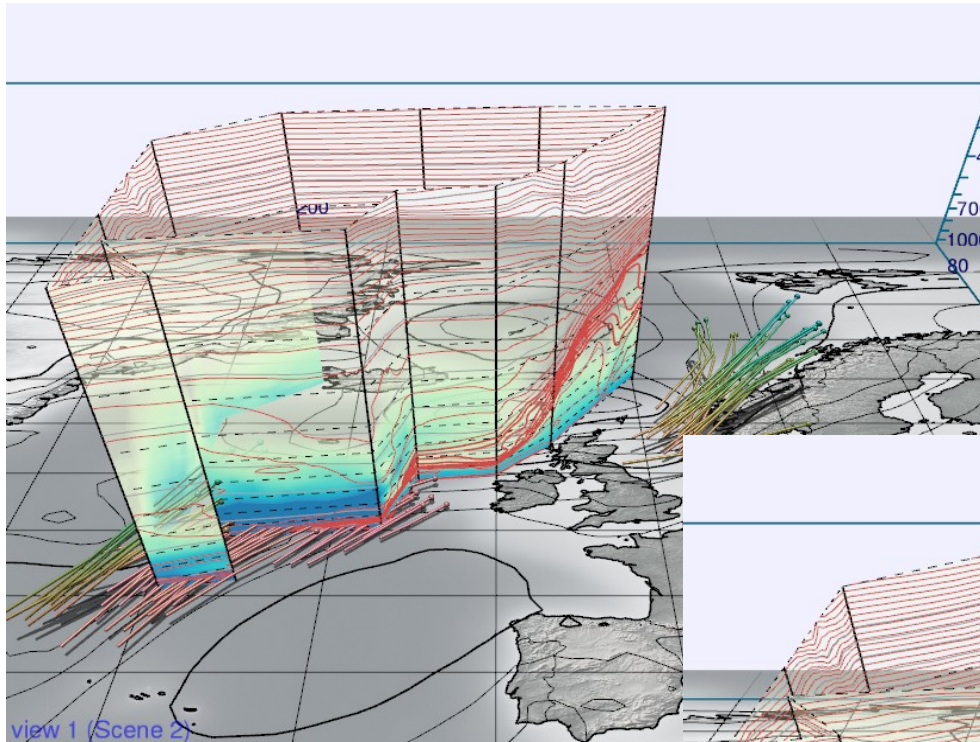


5-day forward trajectories



Tuesday, 27 Sep 2016 15 UTC

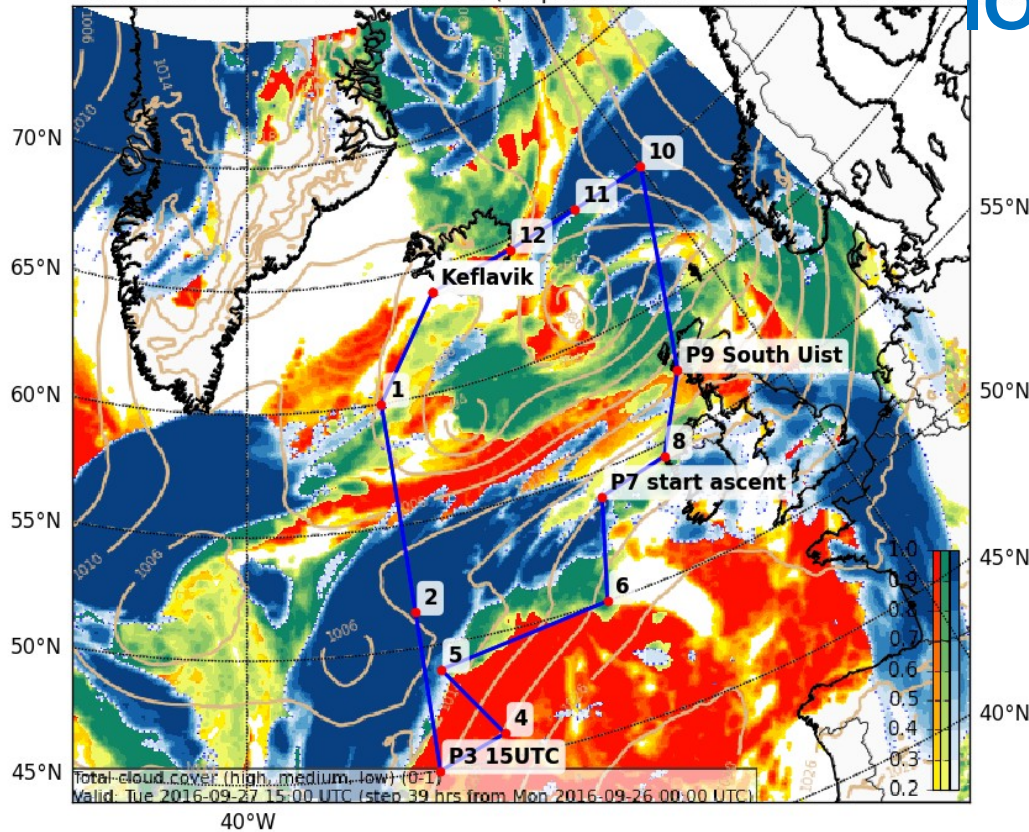
BT 25/12 UTC



Cloud Cover (0-1) (Total Cloud Cover)

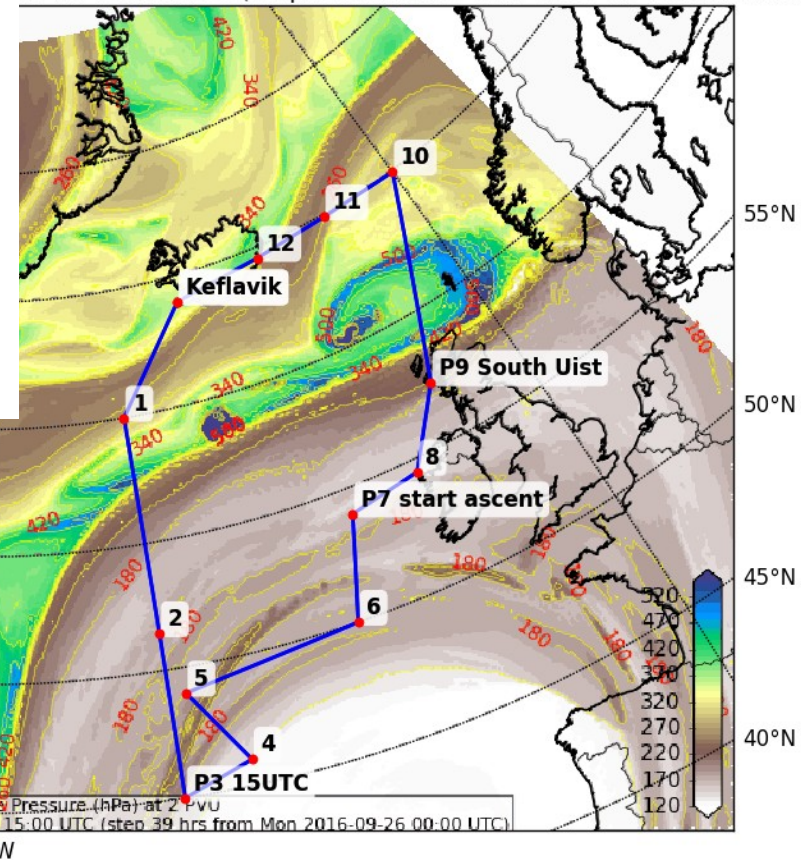
Valid: Tue 2016-09-27 15:00 UTC (step 39 hrs from Mon 2016-09-26 00:00 UTC)

POP5 HALO Tuesday 27



Dynamical Tropopause (Pressure (hPa)) at 2000 (10^{-3} PVU)

Valid: Tue 2016-09-27 15:00 UTC (step 39 hrs from Mon 2016-09-26 00:00 UTC)

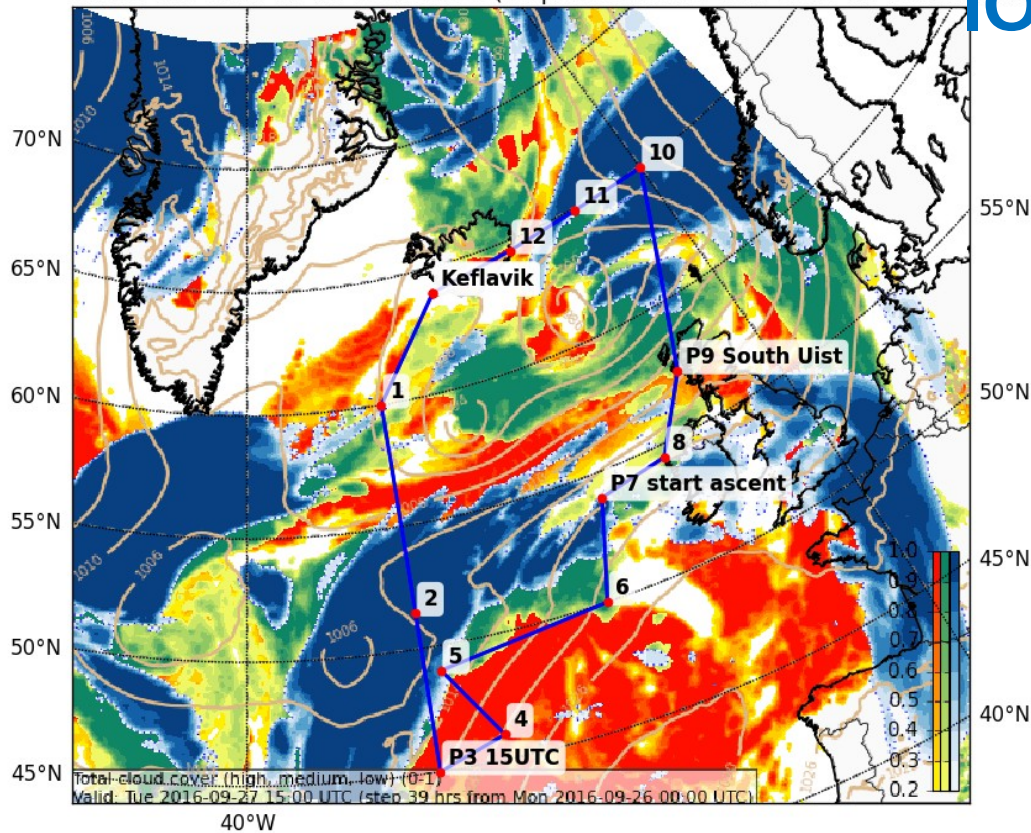


valid Tue, 27 1!

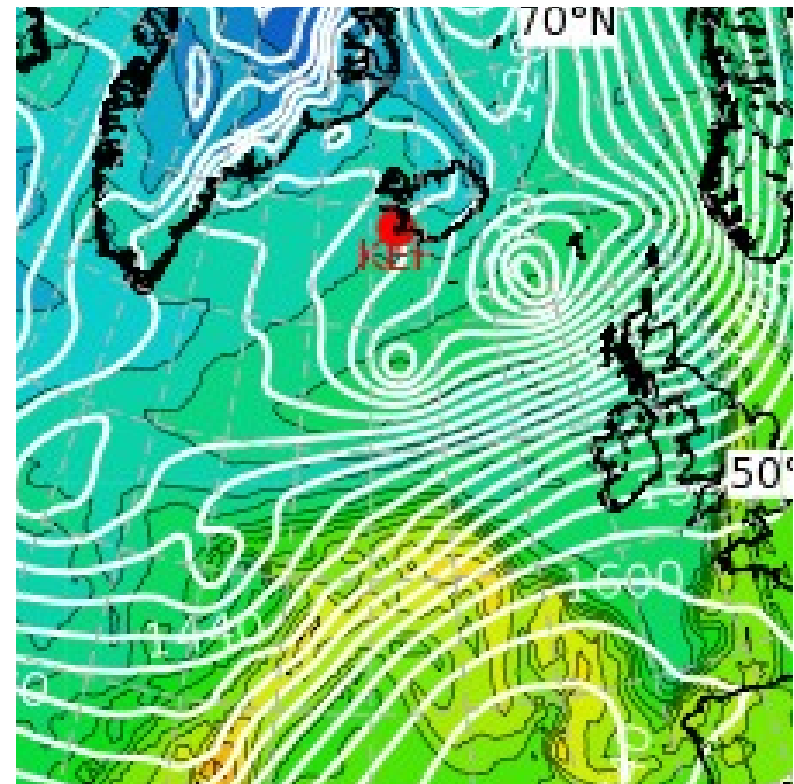
Cloud Cover (0-1) (Total Cloud Cover)

Valid: Tue 2016-09-27 15:00 UTC (step 39 hrs from Mon 2016-09-26 00:00 UTC)

POP5 HALO Tuesday 27



THE850 BT16/00Z VT 27/15Z

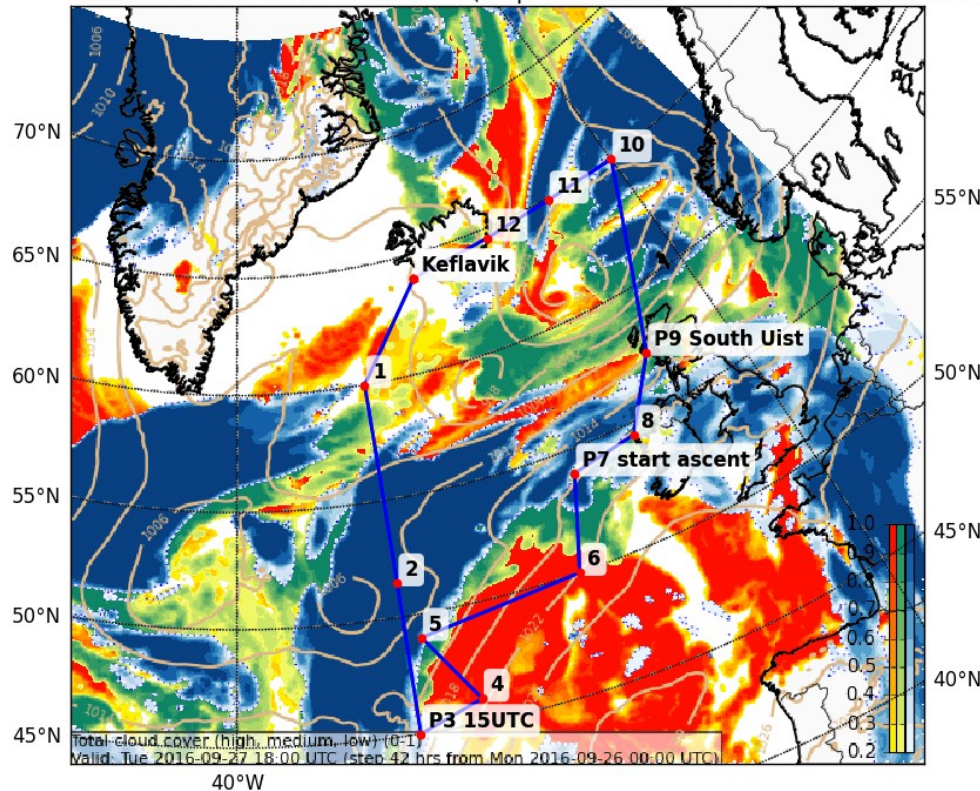


valid Tue, 27 **15UTC** BT26/00Z

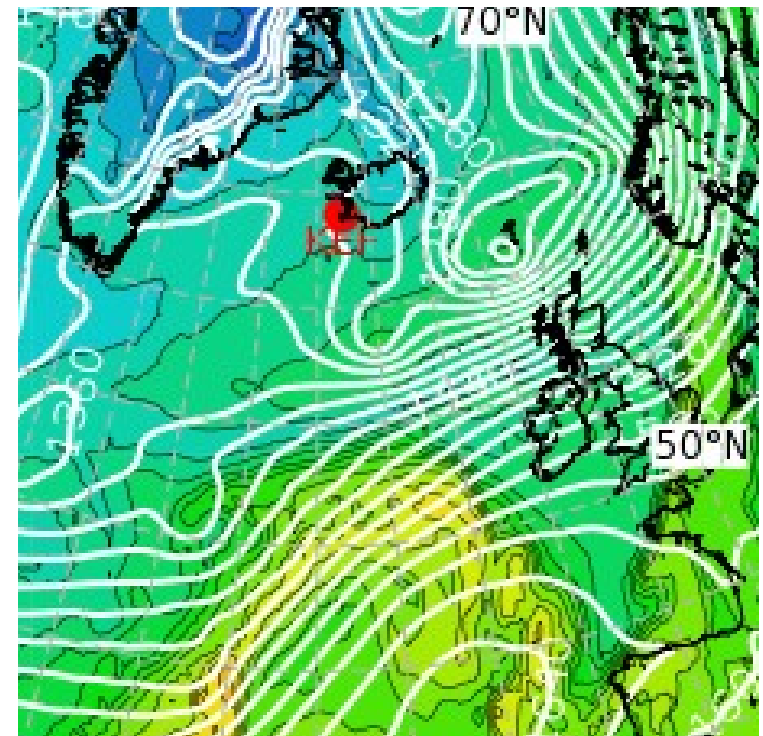
IOP5 HALO Tuesday 27

Cloud Cover (0-1) (Total Cloud Cover)

Valid: Tue 2016-09-27 18:00 UTC (step 42 hrs from Mon 2016-09-26 00:00 UTC)



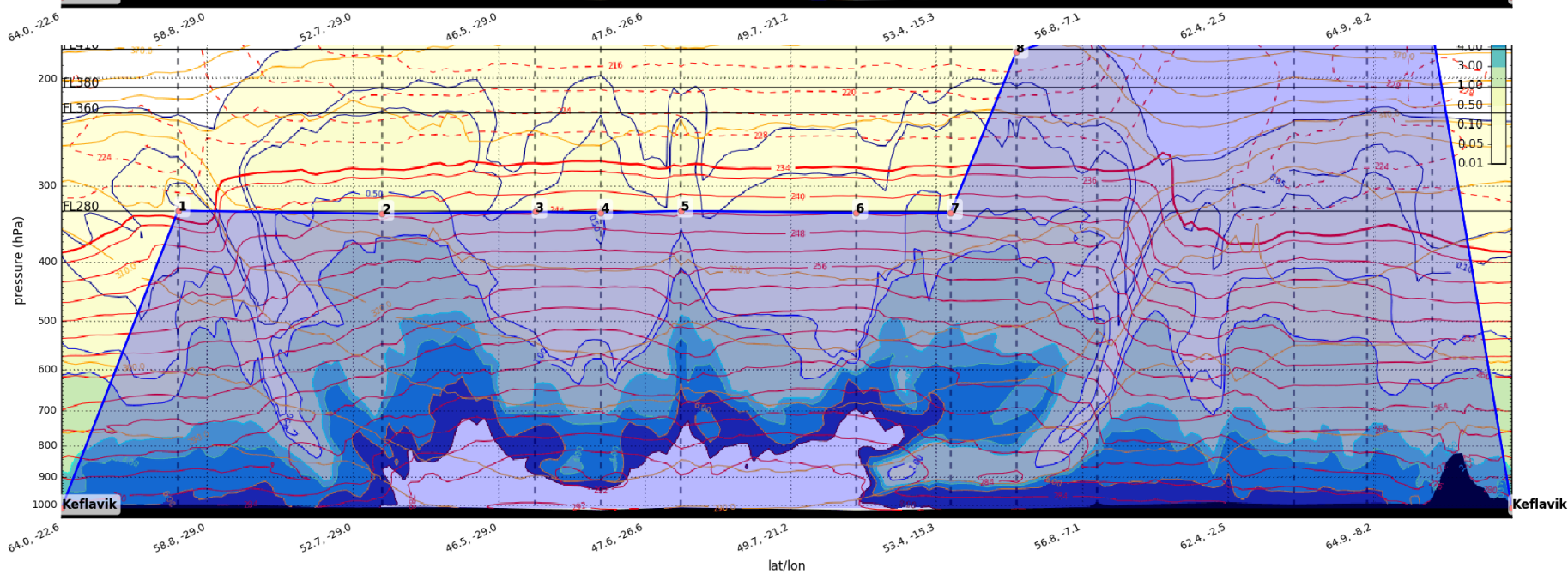
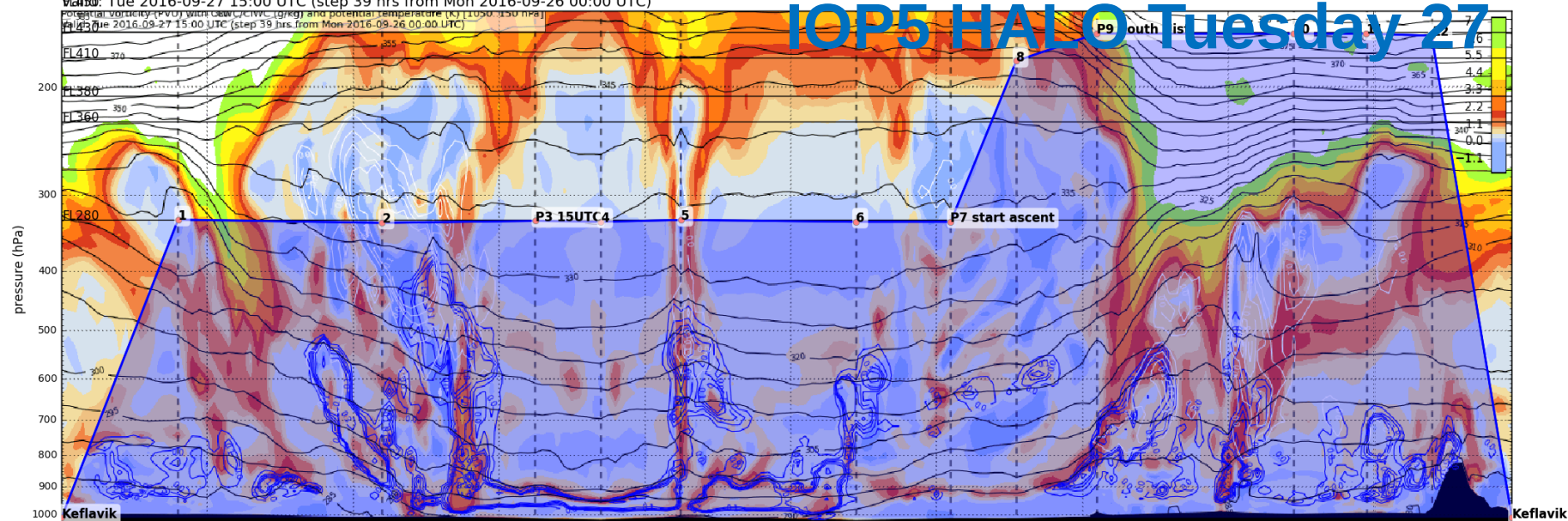
THE850 BT16/00Z VT 27/18Z



valid Tue, 27 **15UTC** BT26/00Z

Potential Vorticity (PVU) Vertical Section (Northern Hemisphere)
 Valid: Tue 2016-09-27 15:00 UTC (step 39 hrs from Mon 2016-09-26 00:00 UTC)
 Potential vorticity is shown as contours (grey) and potential temperature as color (red to blue).
 P3 15UTC4

IOP5 HALO P9 South is Tuesday 27

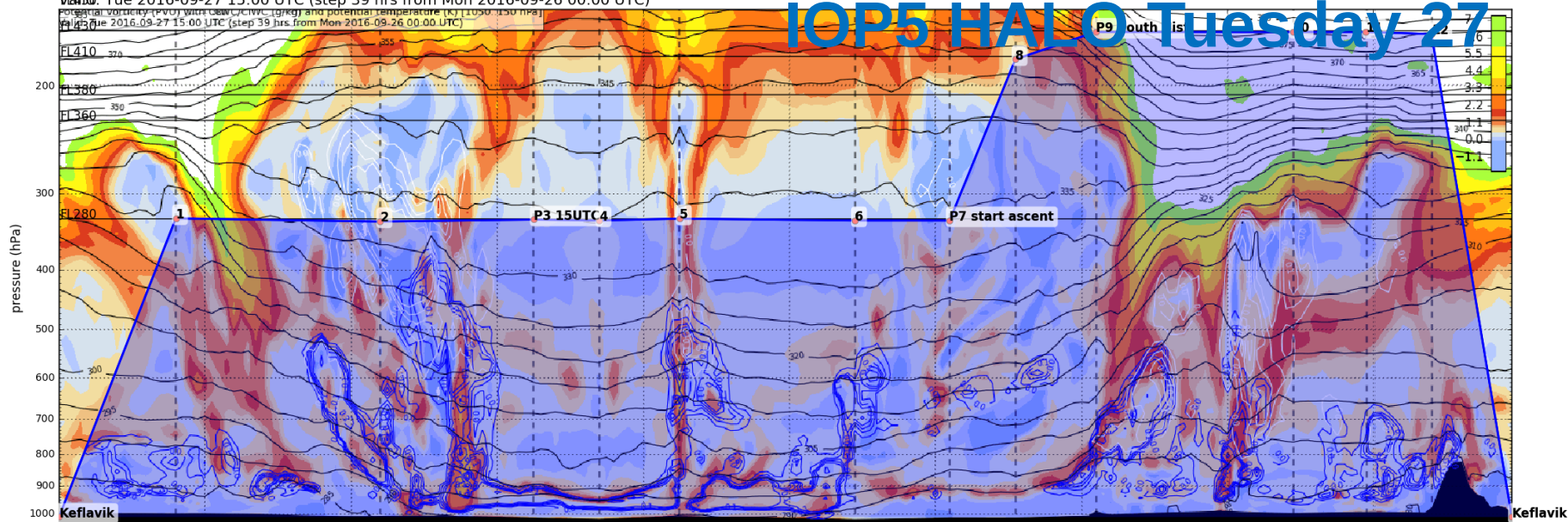


Valid Tue, 27 1500 UTC BT 26/00Z

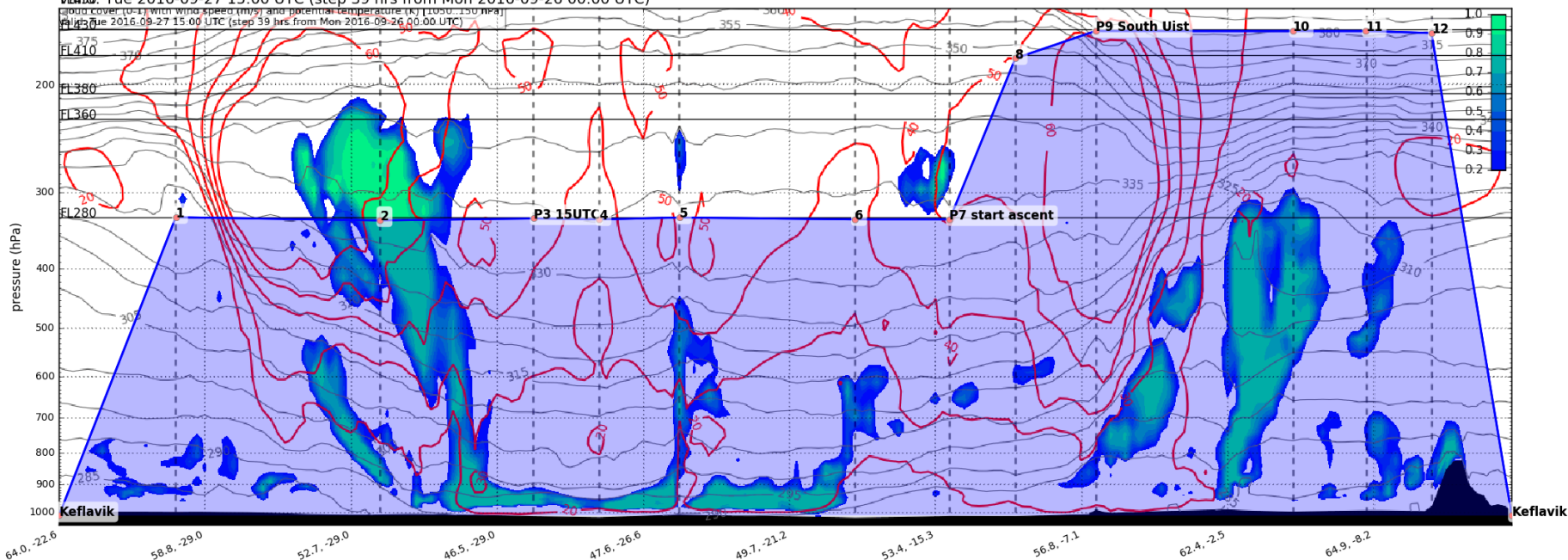
Keflavik, Monday, 26 September 2016

NAWDEX General Meeting

Potential Vorticity (PVU) Vertical Section (Northern Hemisphere)
 Valid: Tue 2016-09-27 15:00 UTC (step 39 hrs from Mon 2016-09-26 00:00 UTC)
 Potential vorticity (PVU) (grey) and potential temperature (K) (1050-150 hPa)
 P15: Tue 2016-09-27 15:00 UTC (step 39 hrs from Mon 2016-09-26 00:00 UTC)



Cloud Cover (0-1) and Wind Speed (m/s) Vertical Section
 Valid: Tue 2016-09-27 15:00 UTC (step 39 hrs from Mon 2016-09-26 00:00 UTC)
 Cloud cover (0-1) with wind speed (m/s) and potential temperature (K) (1050-150 hPa)
 P15: Tue 2016-09-27 15:00 UTC (step 39 hrs from Mon 2016-09-26 00:00 UTC)



valid Tue, 27 15UTC BT26/00Z

Radiosonde IOP Tue/Wed

Plan for Radiosonde launches

- **Start: Tuesday 18 UTC**
- **Finish: Wednesday 12 UTC**
- **Request 2 additional Radiosondes from IMO (for Tuesday 18 UTC and Wednesday 6 UTC)**
- **DLR launches parallel to IMO balloons with less Helium**
 - > get vertical gradients
- **Launch of large 3kg balloon on Wednesday 0 and 6 UTC**
- **Today test launch**



Summary plans

- **Today: Final flight plans of DLR-Falcon/UK FAAM BAE 146**
(take-off Tuesday 09:00 UTC, meet FAAM at 10:40 UTC)
- **Today: final flight plans for HALO flight on Tuesday**
(take-off Tuesday 11:30 UTC)
- Additional radiosounds over western Europe (to be defined in the afternoon discussion)
- **No flights planned for Wednesday!**
- **Outlook: Possible cyclone on Fri/Sat**