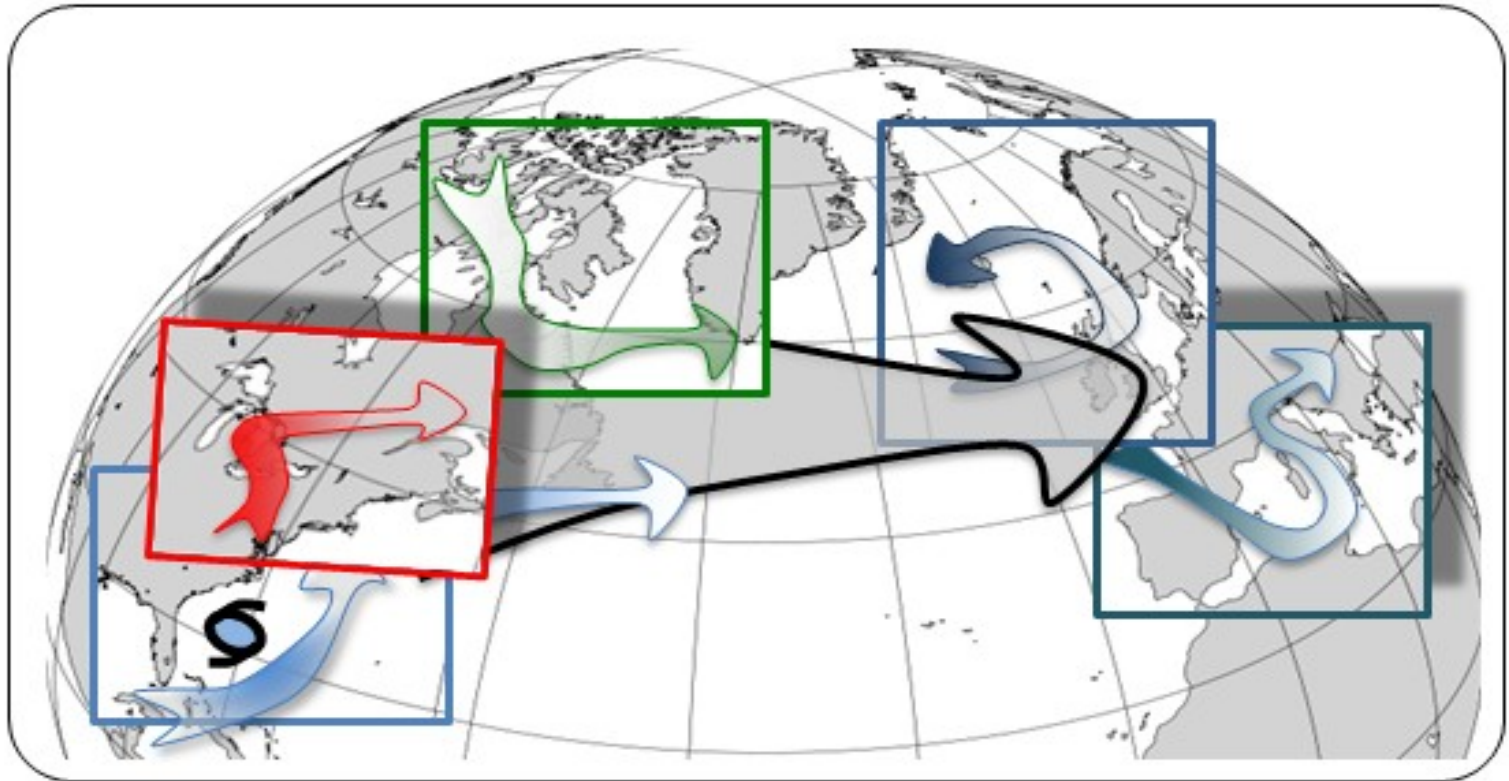


NAWDEX – General Planning Meeting

25 September 2016, Keflavik 11 UTC



NAWDEX – General Planning Meeting

25 September 2016, Keflavik 11 UTC

Key issues today

1. Flight plan for HALO Monday (George, Volkmar, Christian G.)
2. Coordinated flights of DLR-Falcon and UK FAAM BAE 146 Tuesday (Andreas)
3. Flight of HALO on Tuesday afternoon (Hanin, Andreas, Christian K.)
4. Outlook: Radiosondes and possible Falcon flight on Wednesday to capture gravity waves

NAWDEX – General Planning Meeting

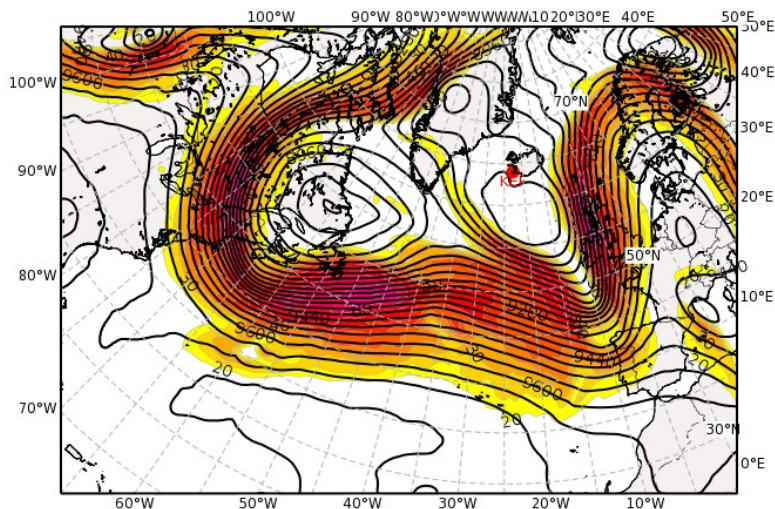
25 September 2016, Keflavik 11 UTC

1. Key information from previous flight (2 minutes)
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 HALO Monday flights
6. Discussion flights on Tuesday (Halo, Falcon, FAAM)
7. Report of Ground-Based Observation coordinator
8. Gravity wave IOP on Wednesday?
9. Coordination with other aircraft (Input from other groups)

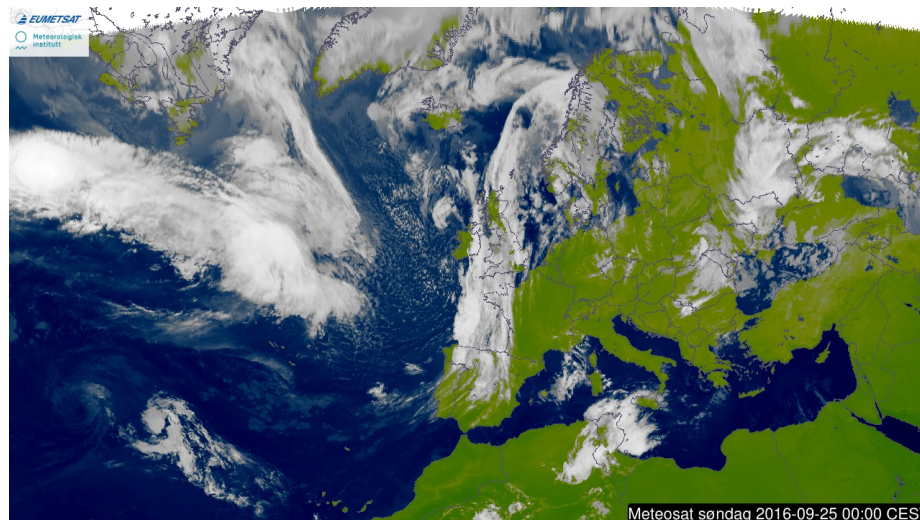
Analysis – 25 Sep 2016, 00 UTC

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

Valid: Sun, 25 Sep 2016, 00 UTC (step 000 h from Sun, 25 Sep 2016, 00 UTC)

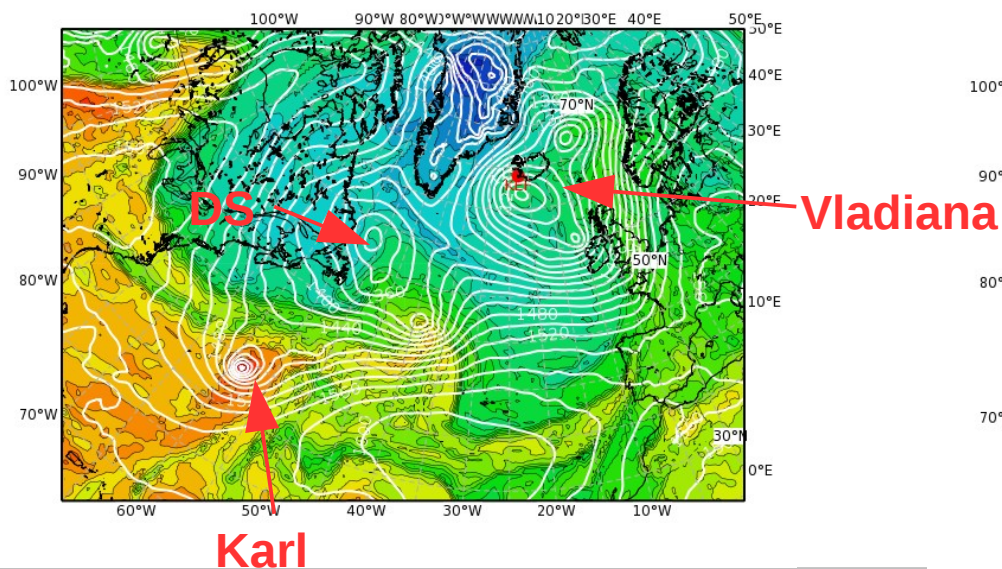


Z300, SAT
THE850, RH700



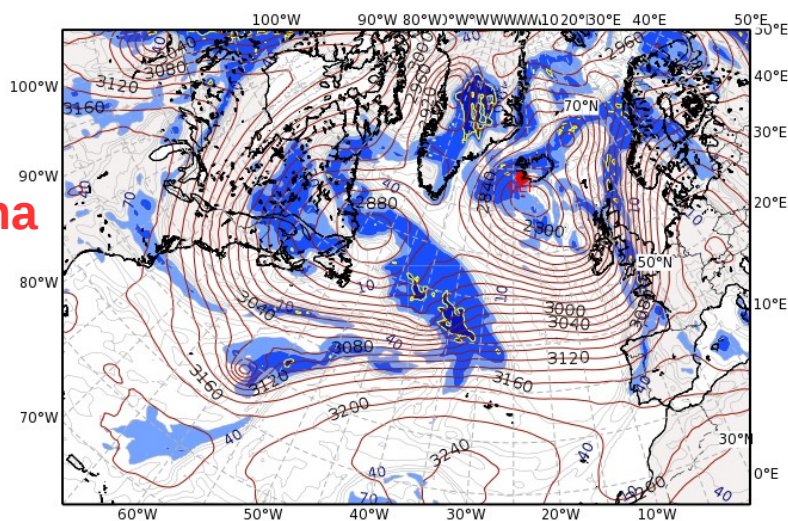
Equivalent Potential Temperature (degC) & Streamlines at 850 hPa

Valid: Sun, 25 Sep 2016, 00 UTC (step 000 h from Sun, 25 Sep 2016, 00 UTC)



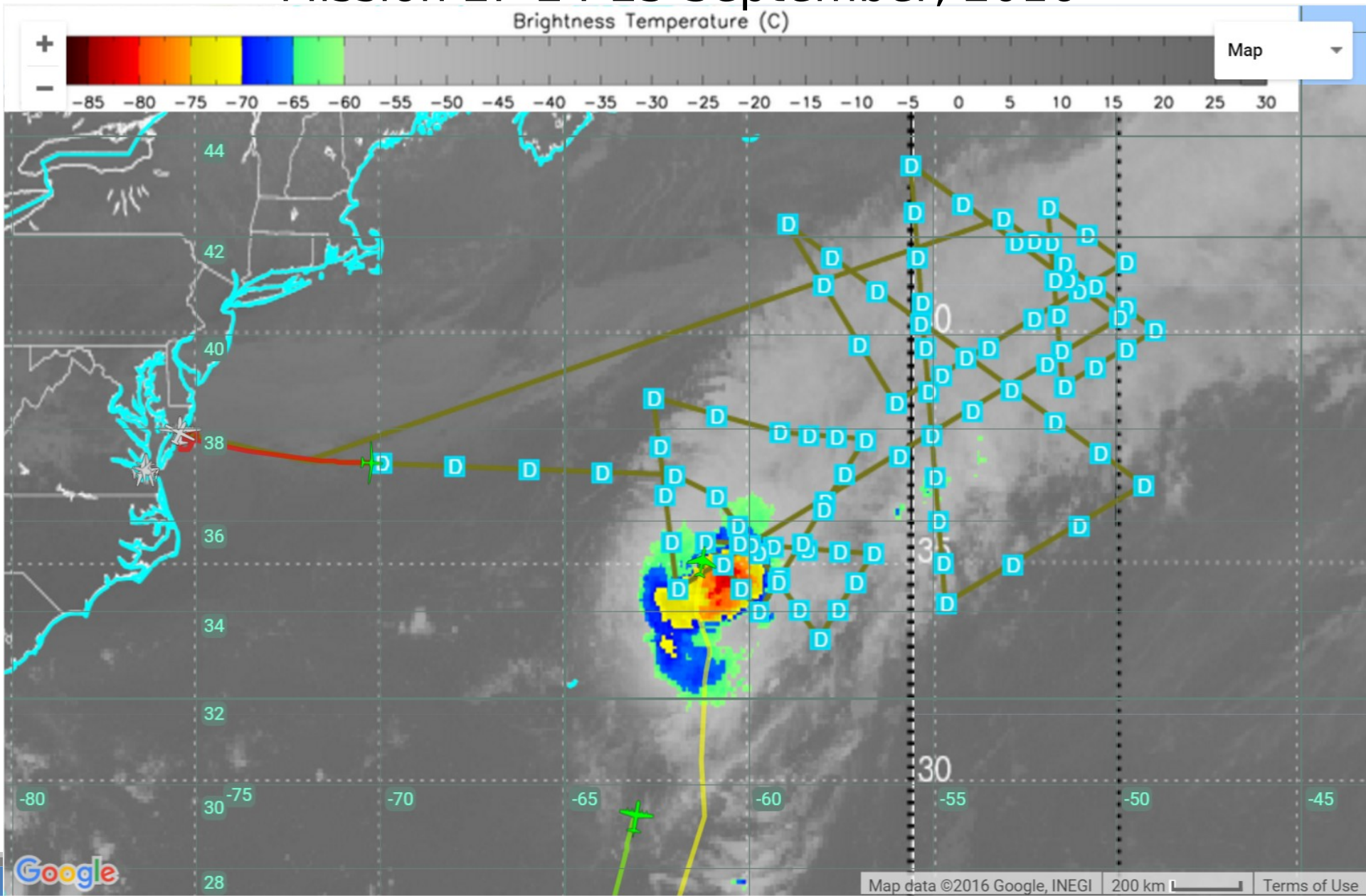
Relative Humidity (%) and Z (m) at 700 hPa

Valid: Sun, 25 Sep 2016, 00 UTC (step 000 h from Sun, 25 Sep 2016, 00 UTC)



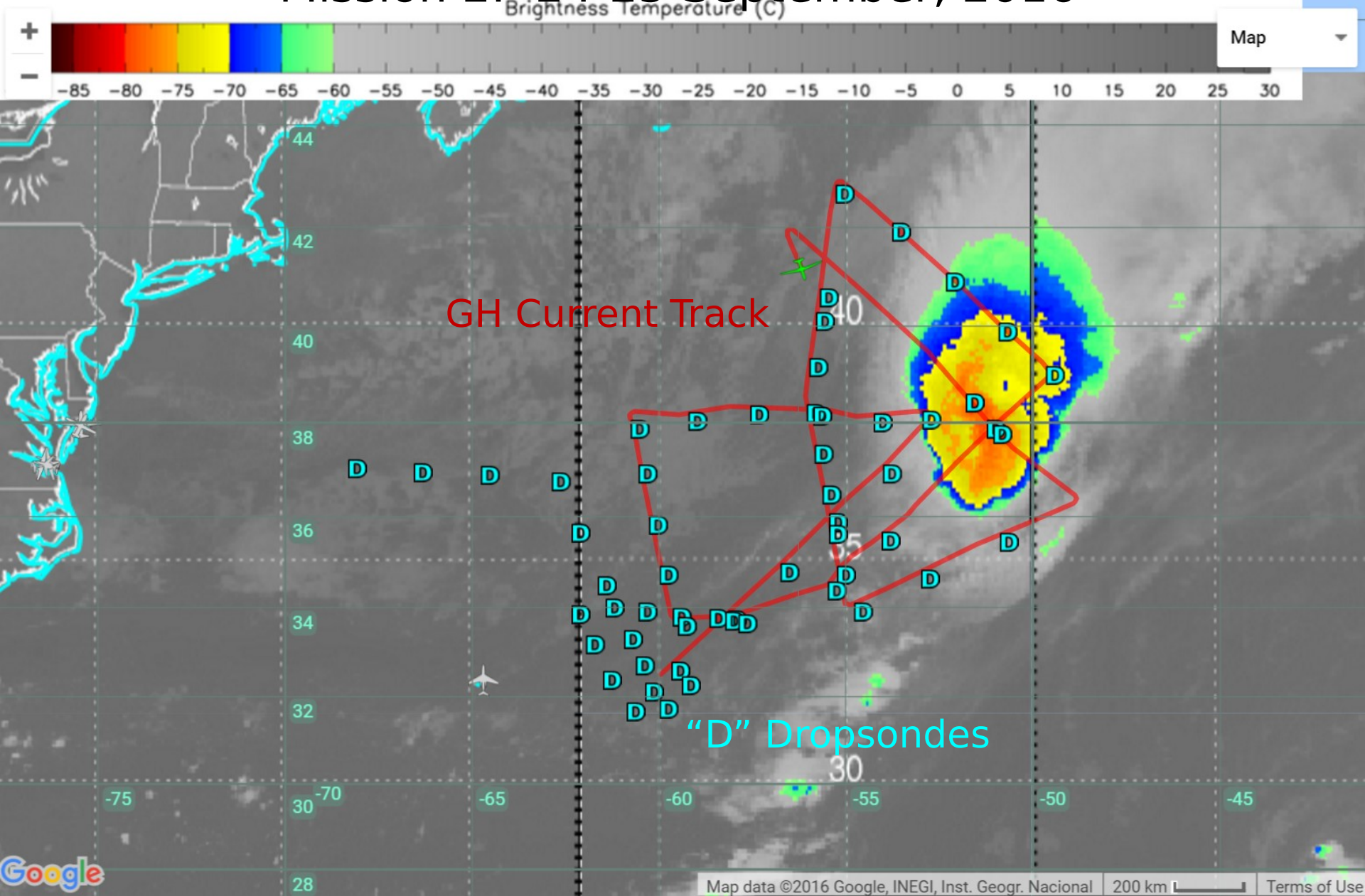
SHOUT Global HAWK Flight Over Karl

Mission 2: 24-25 September, 2016



SHOUT Global HAWK Flight Over Karl

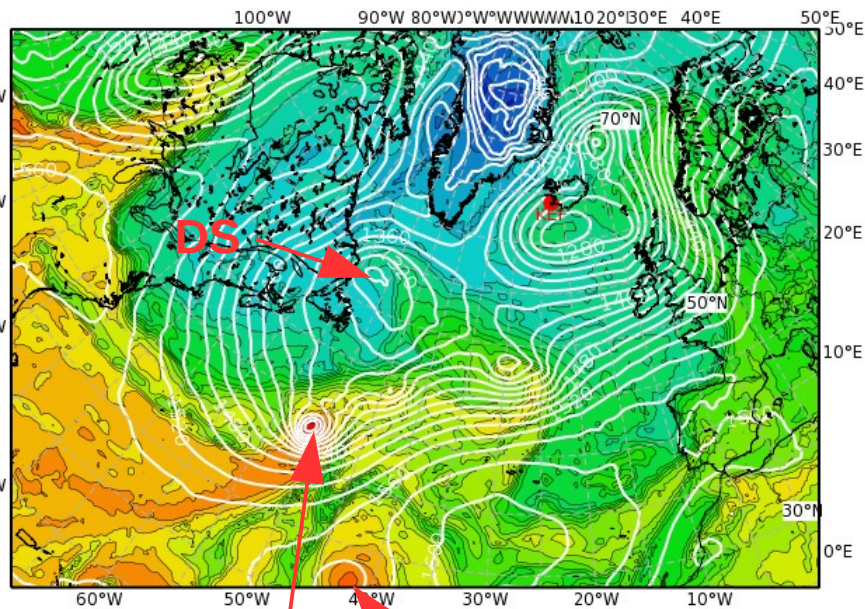
Mission 2: 24-25 September, 2016



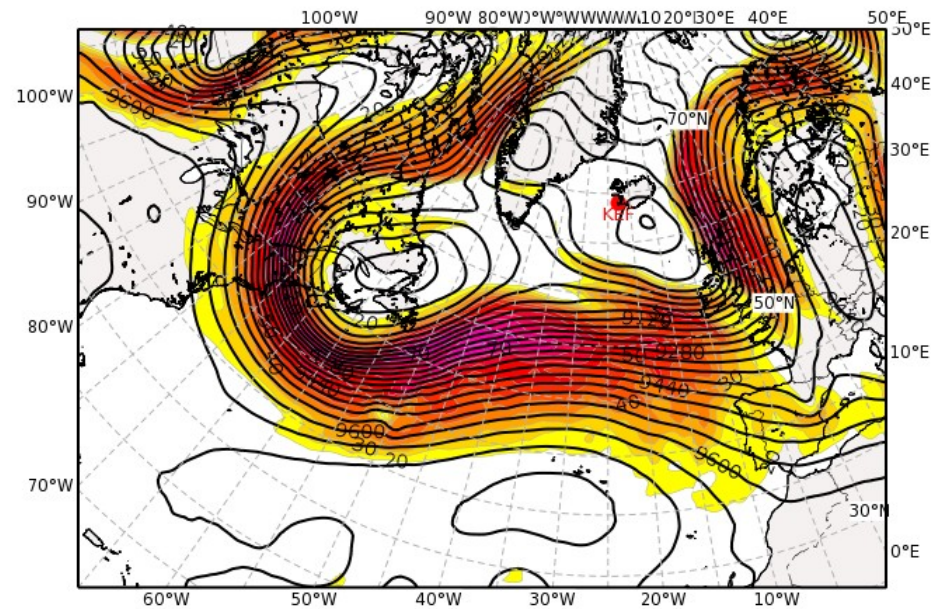
Forecast for Sun, 25 Sep 2016 12 UTC

THE850, Z300 BT25/00Z

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa
Valid: Sun, 25 Sep 2016, 12 UTC (step 012 h from Sun, 25 Sep 2016, 00 UTC)



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Sun, 25 Sep 2016, 12 UTC (step 012 h from Sun, 25 Sep 2016, 00 UTC)



Karl

Lisa

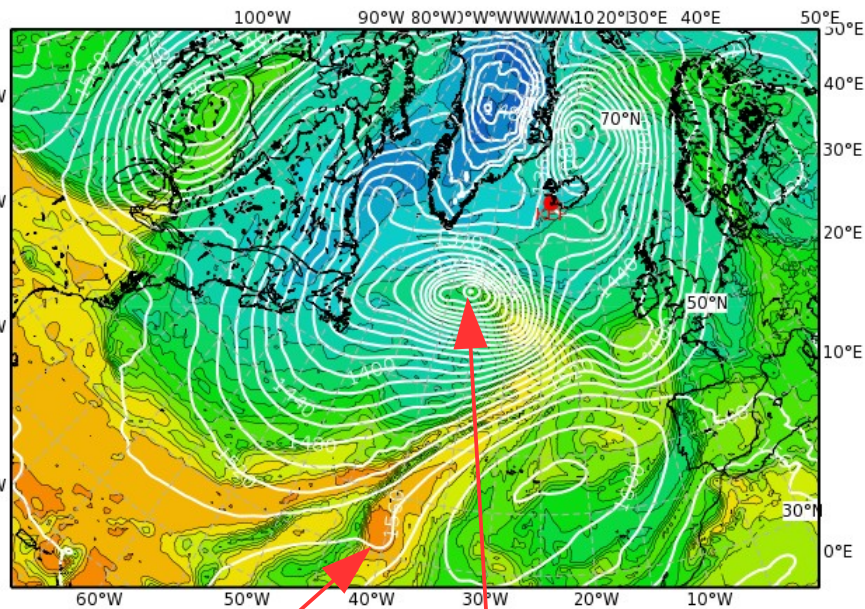
Cloudiness Greenland:



Forecast for Mon, 26 Sep 2016 12 UTC

THE850, Z300 BT25/00Z

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa
Valid: Mon, 26 Sep 2016, 12 UTC (step 036 h from Sun, 25 Sep 2016, 00 UTC)



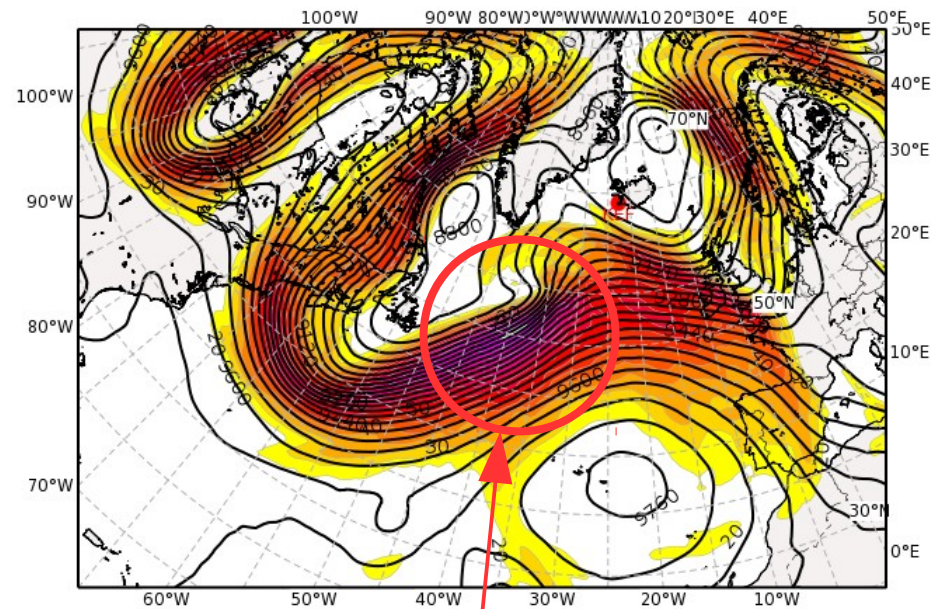
Lisa

ex-Karl

Cloudiness Greenland:



Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Mon, 26 Sep 2016, 12 UTC (step 036 h from Sun, 25 Sep 2016, 00 UTC)

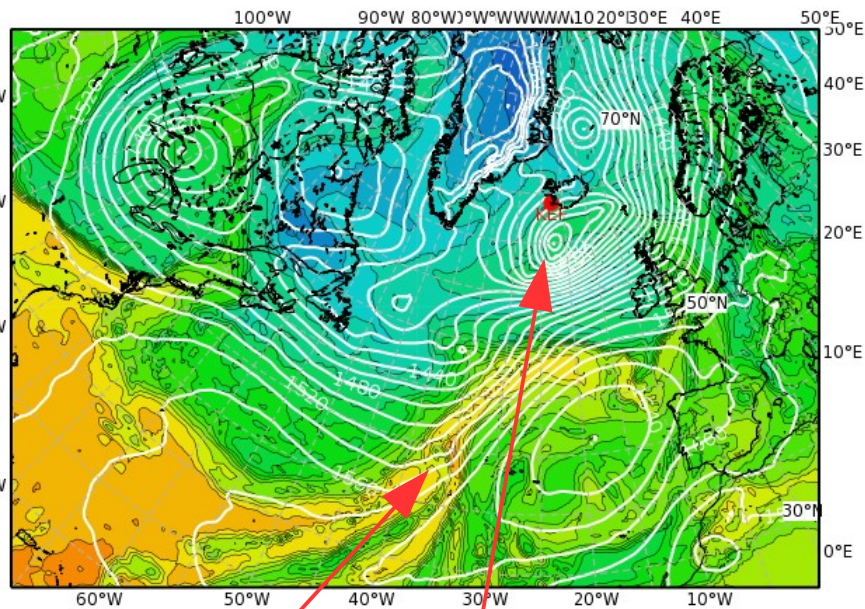


Strong jet (> 85 m/s)

Forecast for Tue, 27 Sep 2016 12 UTC

THE850, Z300 BT25/00Z

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa
Valid: Tue, 27 Sep 2016, 12 UTC (step 060 h from Sun, 25 Sep 2016, 00 UTC)



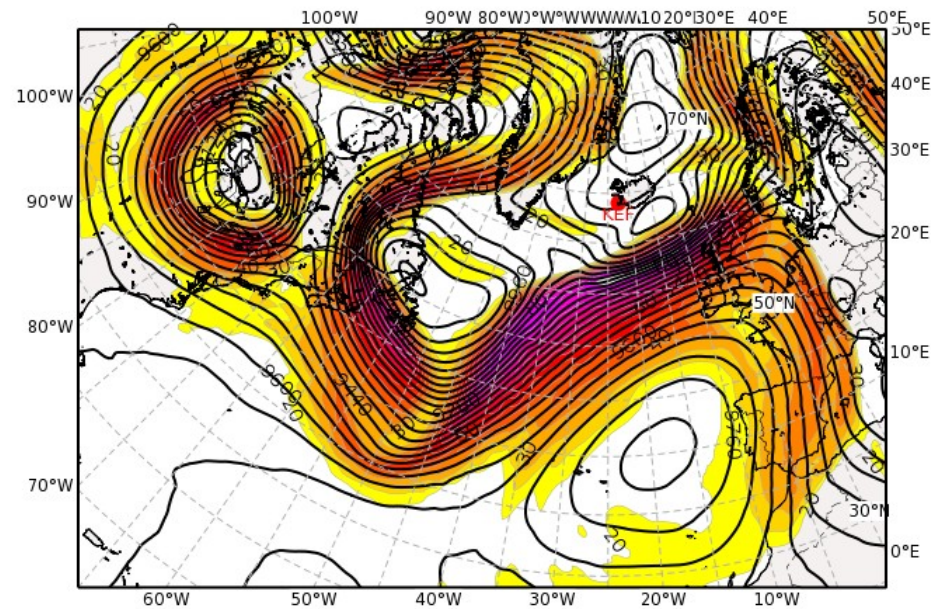
Lisa

ex-Karl

Cloudiness Greenland:



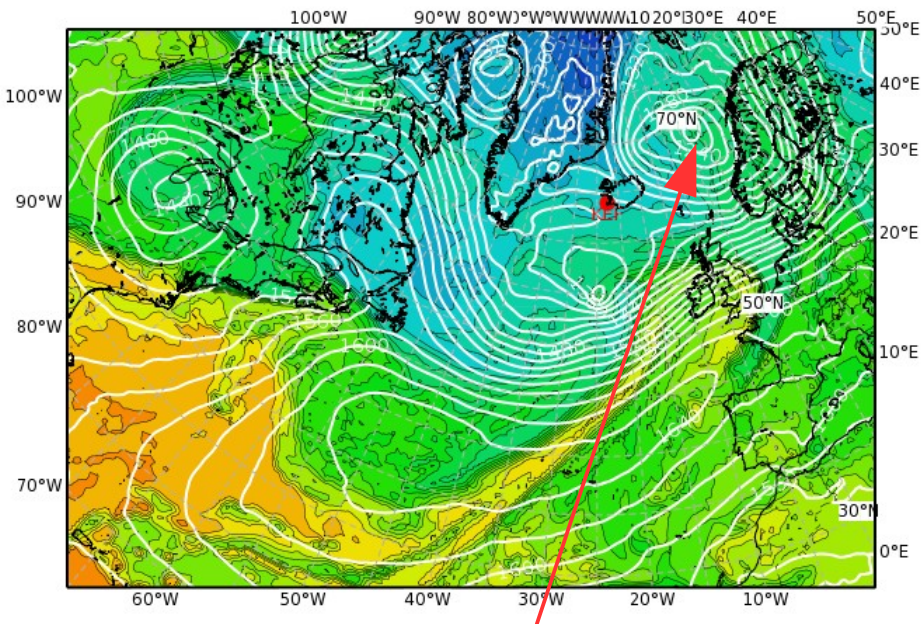
Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Tue, 27 Sep 2016, 12 UTC (step 060 h from Sun, 25 Sep 2016, 00 UTC)



Forecast for Wed, 28 Sep 2016 12 UTC

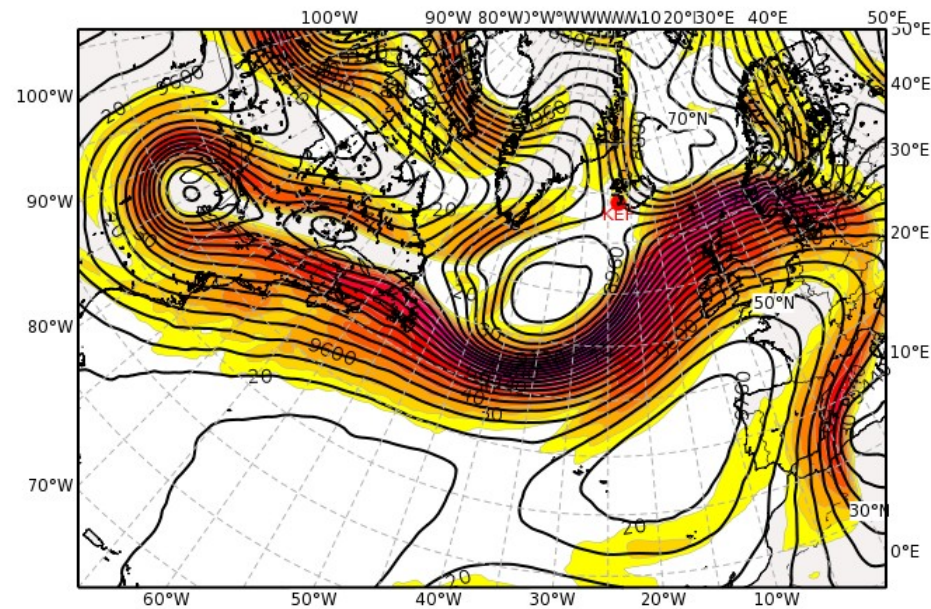
THE850, Z300 BT25/00Z

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa
Valid: Wed, 28 Sep 2016, 12 UTC (step 084 h from Sun, 25 Sep 2016, 00 UTC)



ex-Karl

Geopotential Height (m) & Horizontal Wind (m/s) at 300 hPa
Valid: Wed, 28 Sep 2016, 12 UTC (step 084 h from Sun, 25 Sep 2016, 00 UTC)



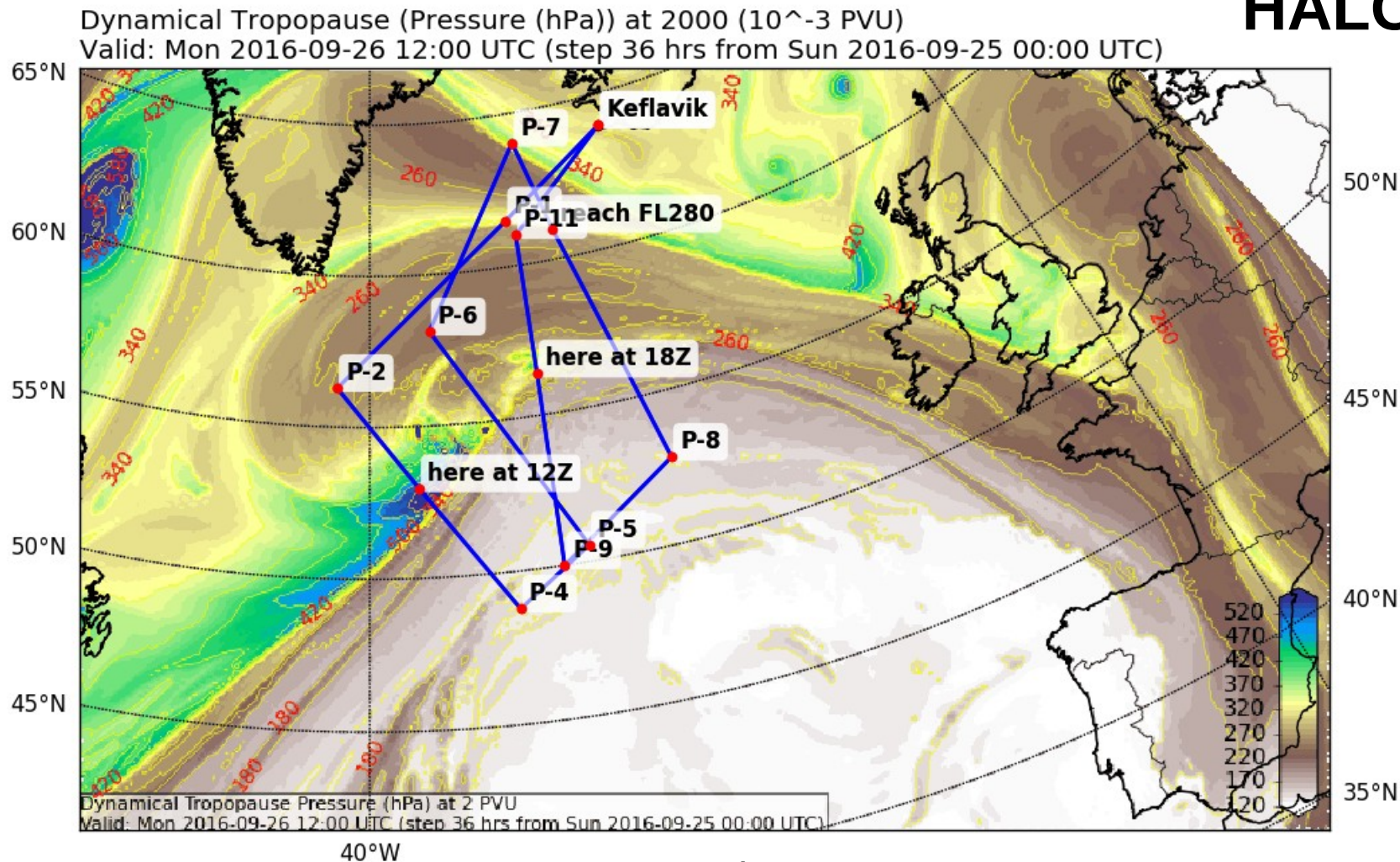
Cloudiness Greenland:



Monday Mission (HALO)

Tentative flight track for Mon, 26 Sep 2016 10:30-20:30 UTC

HALO



Mon 26, 12UTC

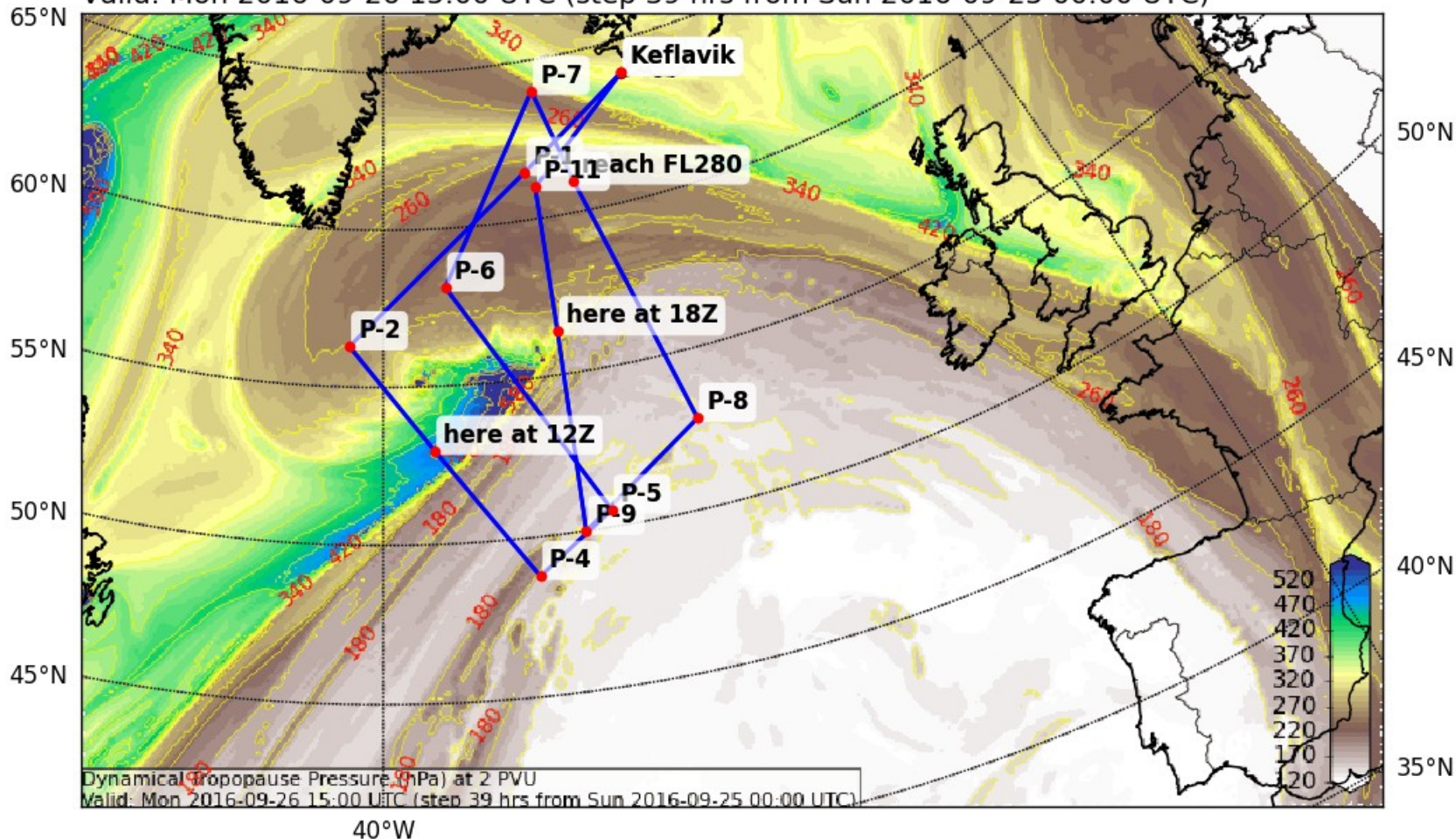
- NOTAM box 14 - 22UTC
- Up to 23 Dropsondes P-7 to P-8 and P-9 to P-11
- Sat overpass not convenient

Tentative flight track for Mon, 26 Sep 2016 10:30-20:30 UTC

HALO

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

Valid: Mon 2016-09-26 15:00 UTC (step 39 hrs from Sun 2016-09-25 00:00 UTC)

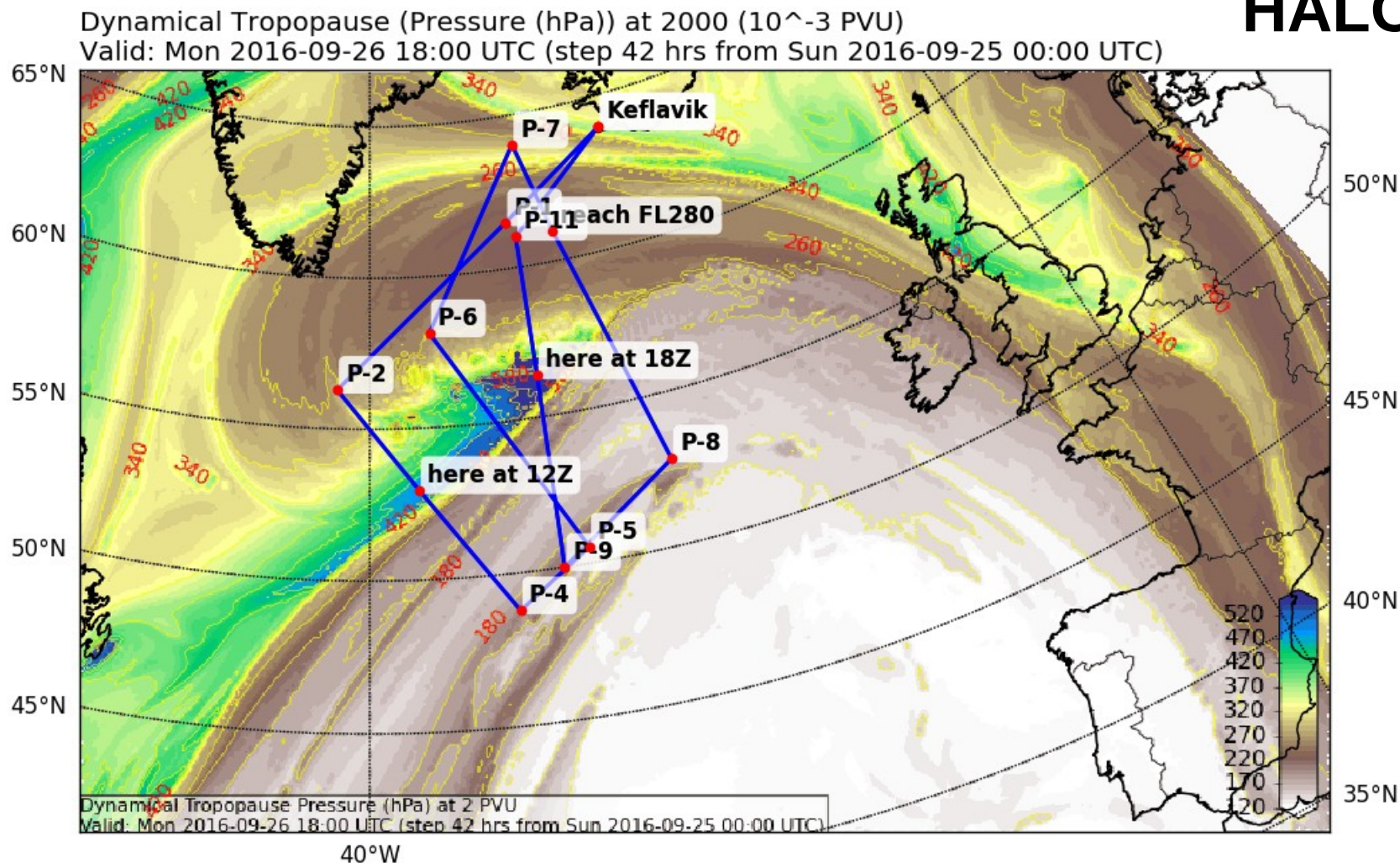


Mon 26, 15UTC

- NOTAM box 14 - 22UTC
- Up to 23 Dropsondes P-7 to P-8 and P-9 to P-11
- Sat overpass not convenient

Tentative flight track for Mon, 26 Sep 2016 10:30-20:30 UTC

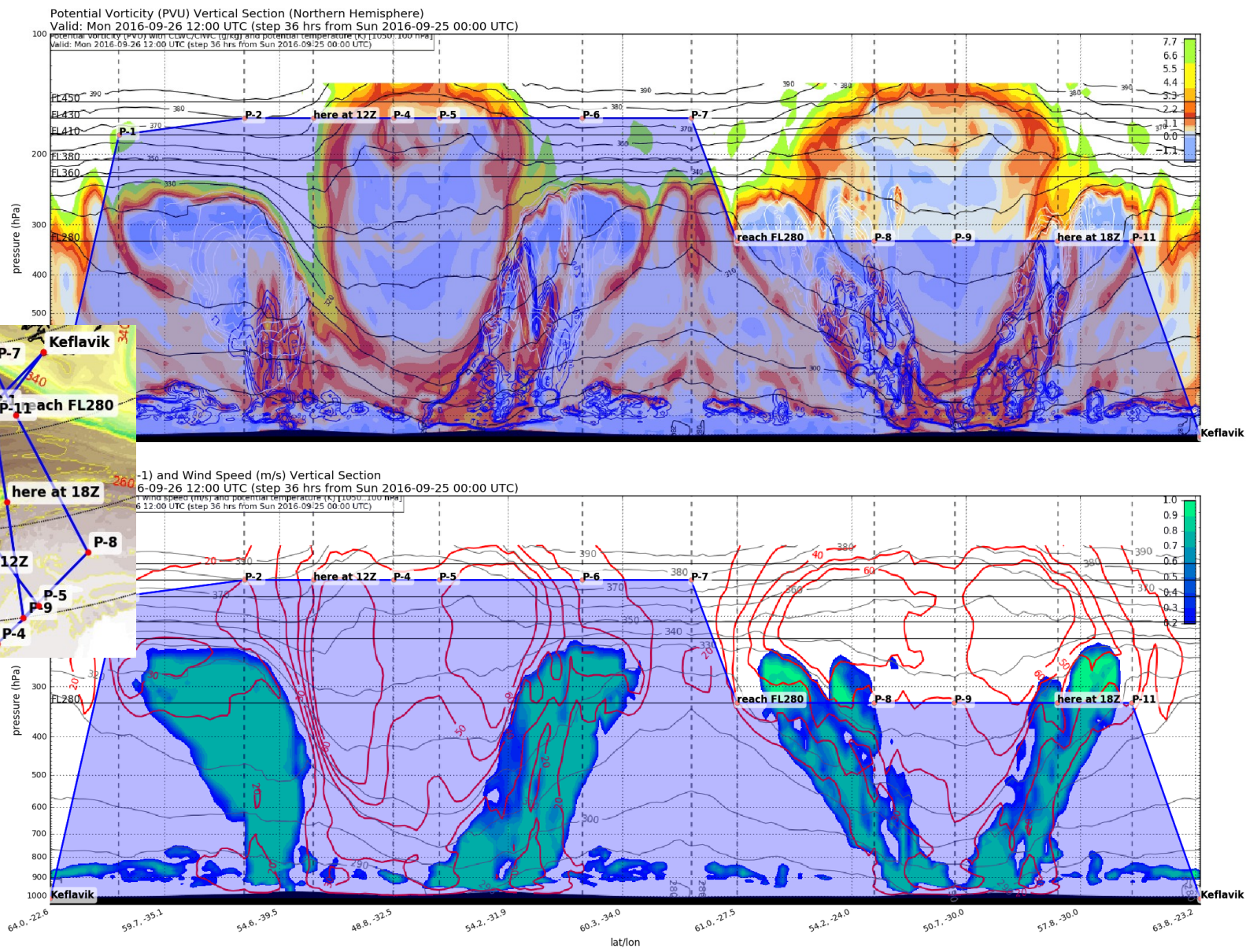
HALO



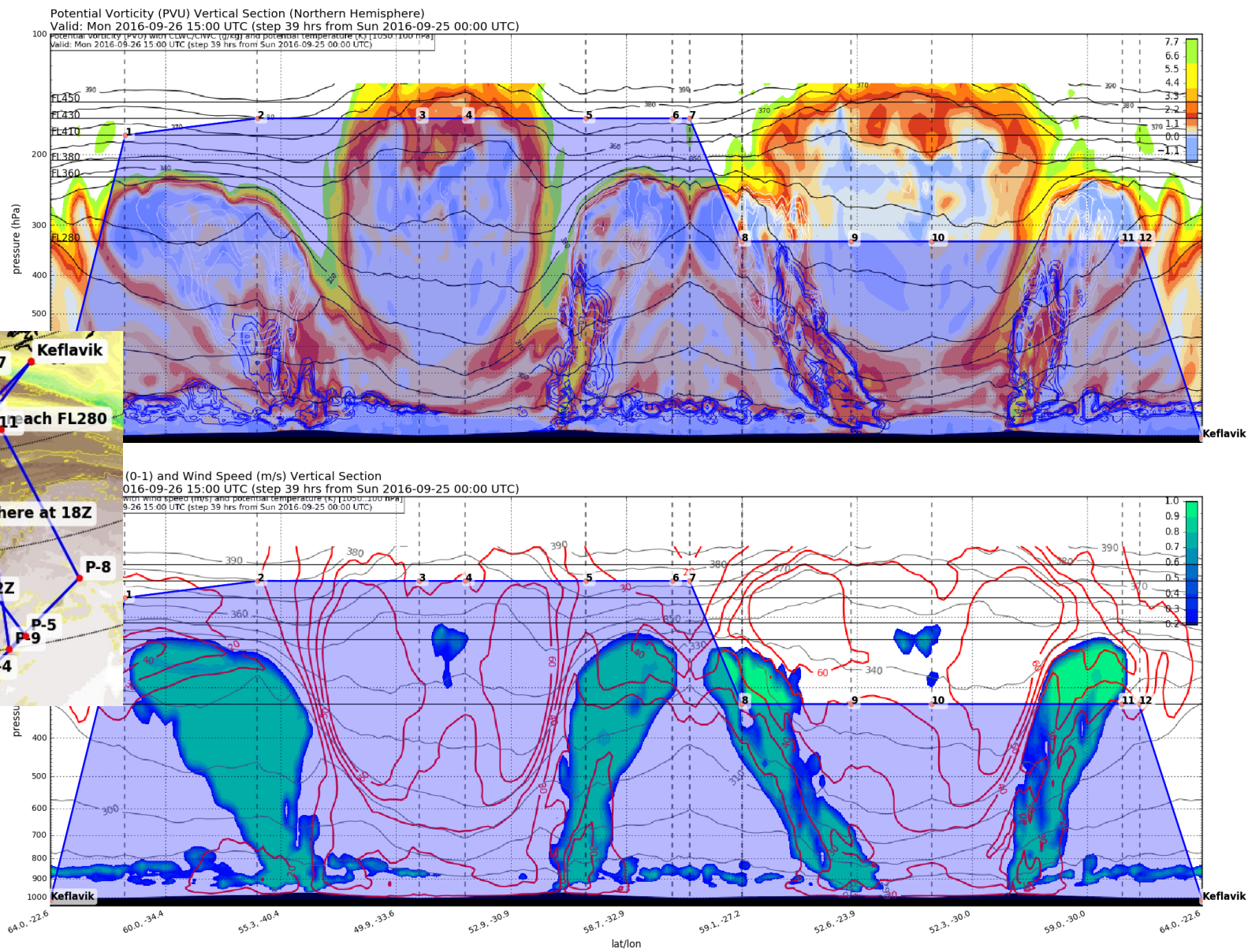
Mon 26, 18UTC

- NOTAM box 14 - 22UTC
- Up to 23 Dropsondes P-7 to P-8 and P-9 to P-11
- Sat overpass not convenient

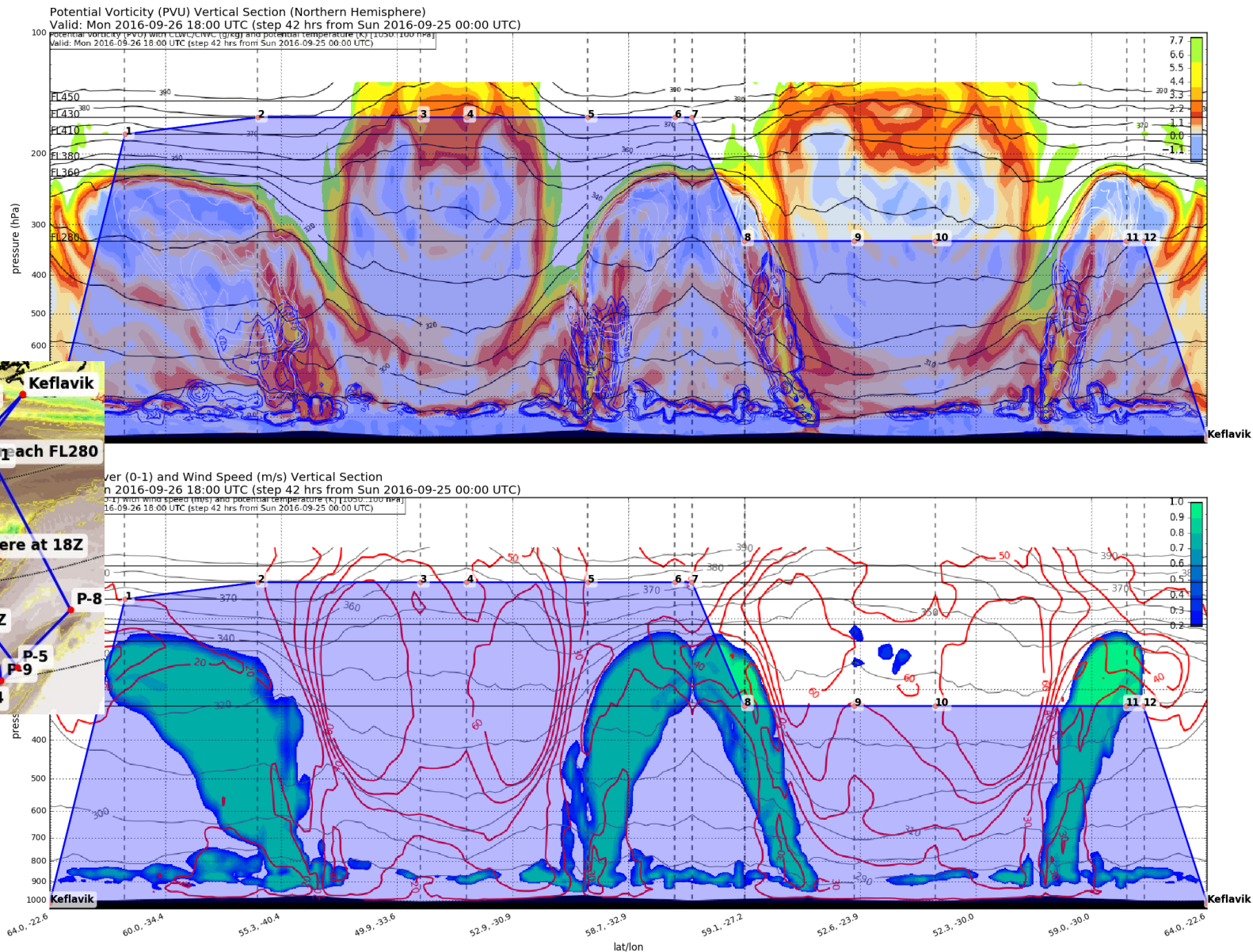
Flight cross section for Mon, 26 Sep 2016 12 UTC



Flight cross section for Mon, 26 Sep 2016 12 UTC

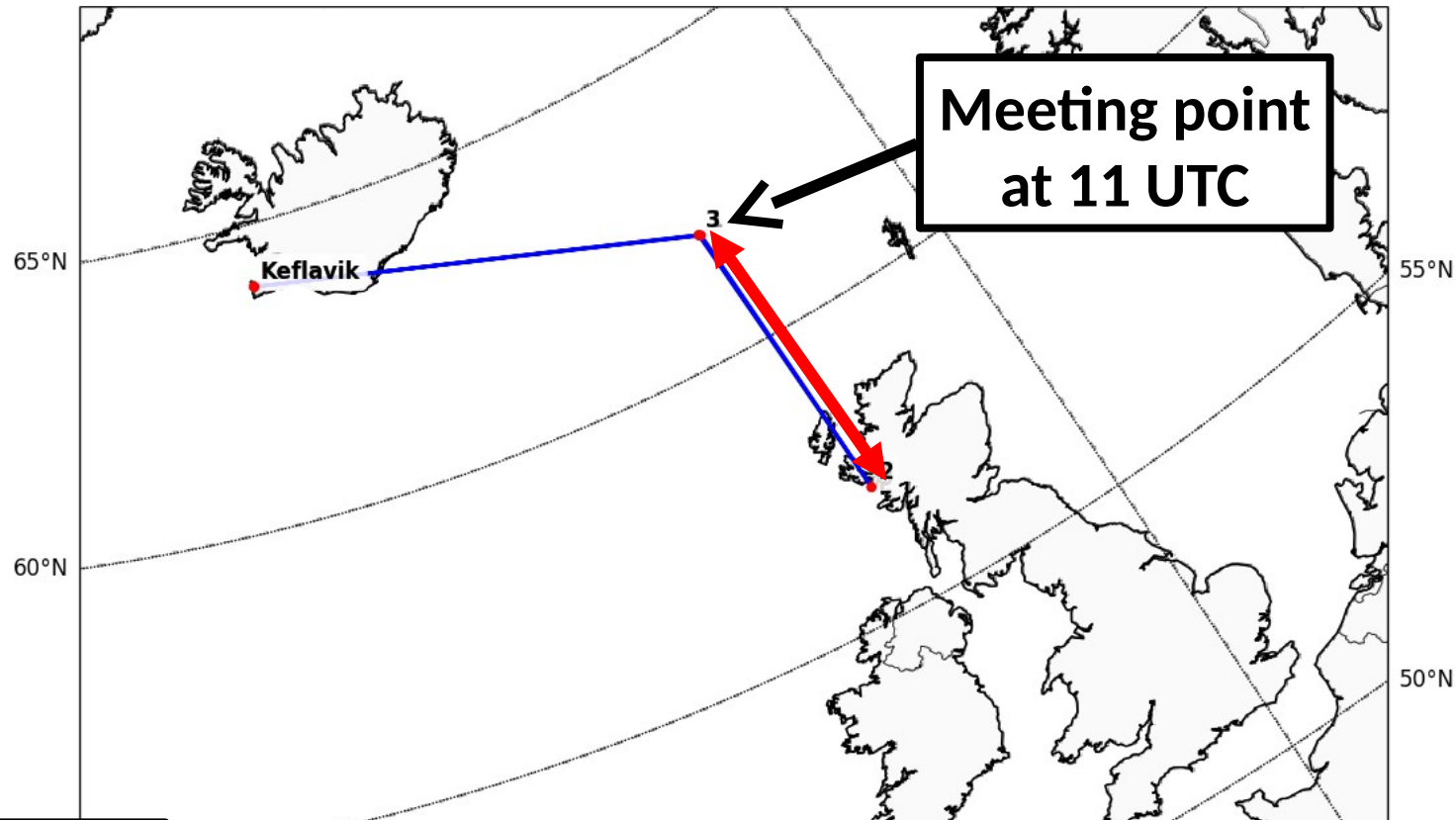


Flight cross section for Mon, 26 Sep 2016 12 UTC



Tuesday Mission (DLR-Falcon, FAAM)

Plan for Tuesday Falcon flight coordinated with FAAM BAE-146

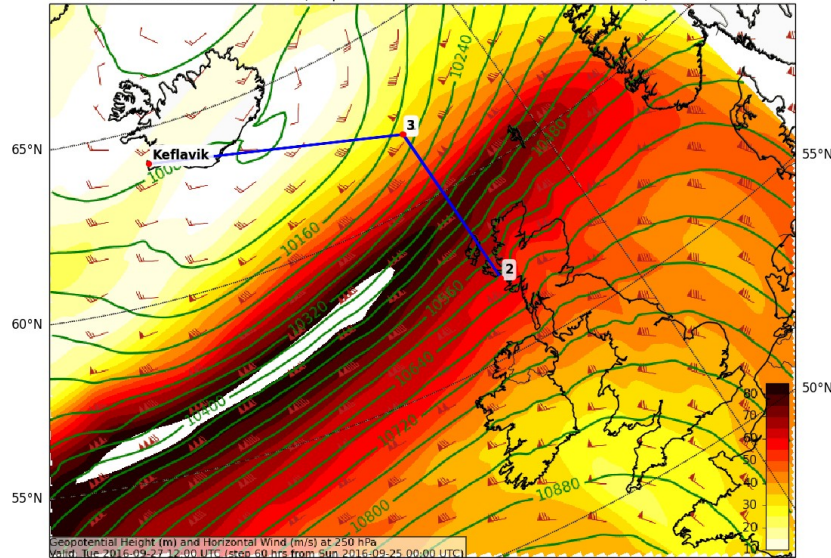


FAAM
BAE 146
DLR
Falcon

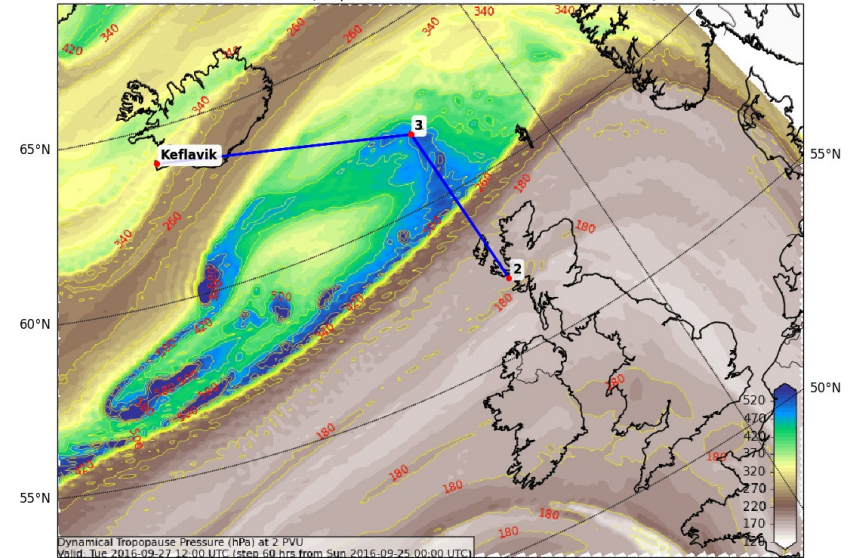
Experience from first flights / previous campaigns:

- Wind observations after 45-60 min after T/O
- Little coverage in very clear stratospheric air (low aerosol load)
- Thin cirrus showed to be optimal target e.g. when WCB outflow arrived
> adapt flight altitude

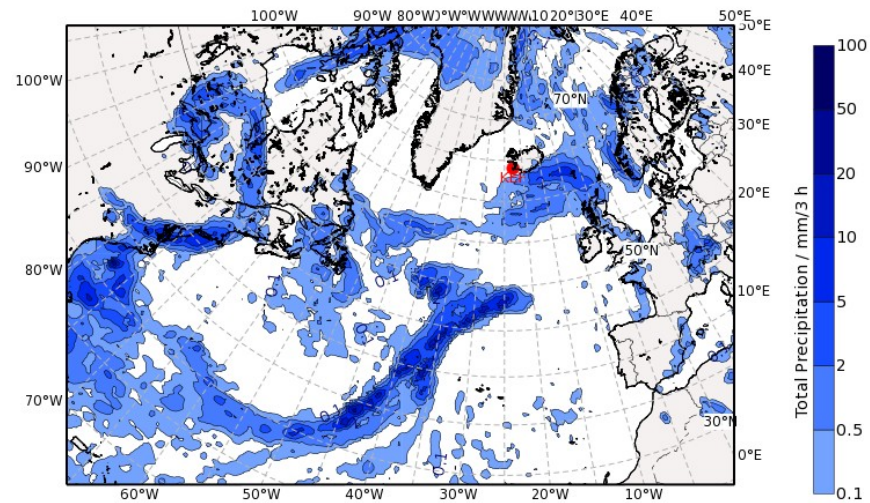
Geopotential Height (m) and Horizontal Wind (m/s) (Wind Speed 10-85 m/s) at 250 (hPa)
Valid: Tue 2016-09-27 12:00 UTC (step 60 hrs from Sun 2016-09-25 00:00 UTC)



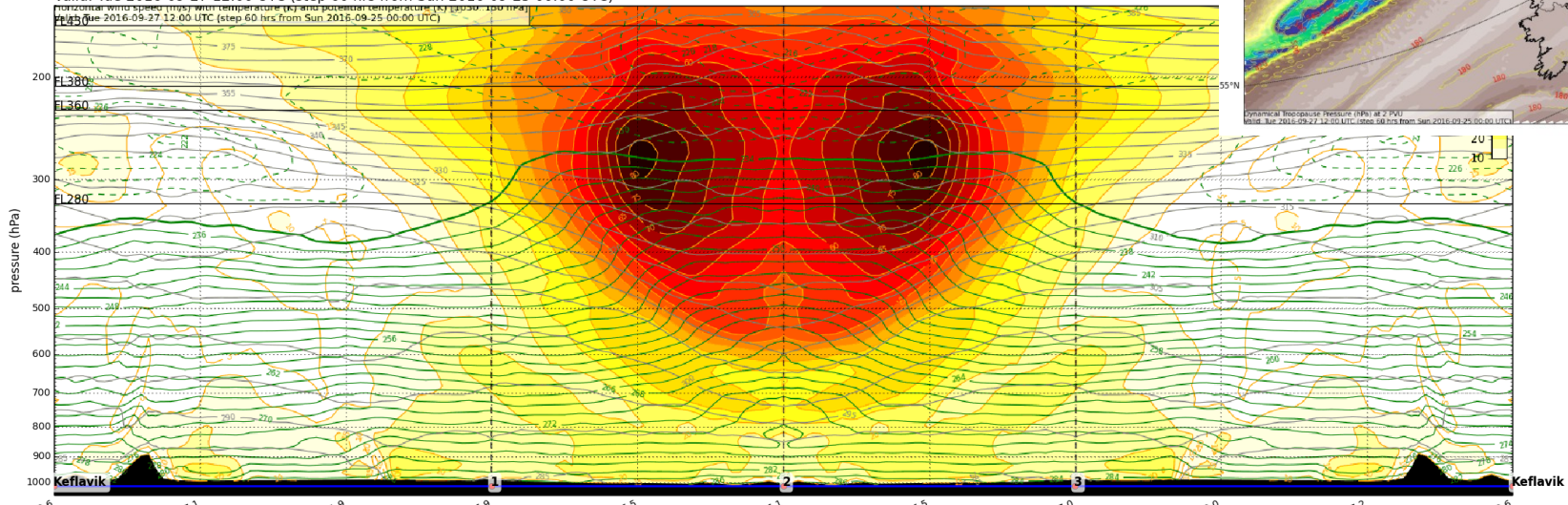
Dynamical Tropopause (Pressure (hPa)) at 2000 (10^{-3} PVU)
Valid: Tue 2016-09-27 12:00 UTC (step 60 hrs from Sun 2016-09-25 00:00 UTC)



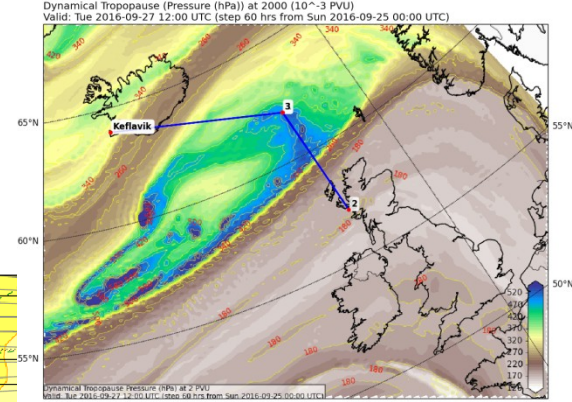
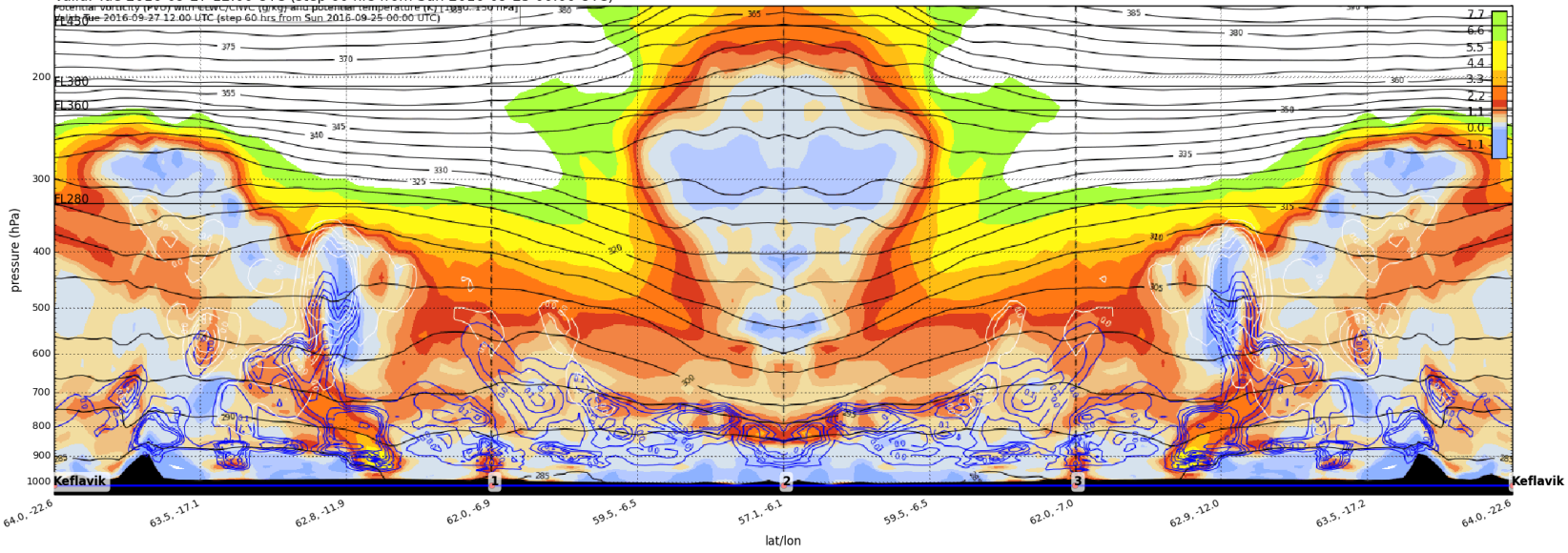
Total Precipitation, accumulated over 3 hours prior to valid time (mm)
Valid: Tue, 27 Sep 2016, 12 UTC (step 060 h from Sun, 25 Sep 2016, 00 UTC)



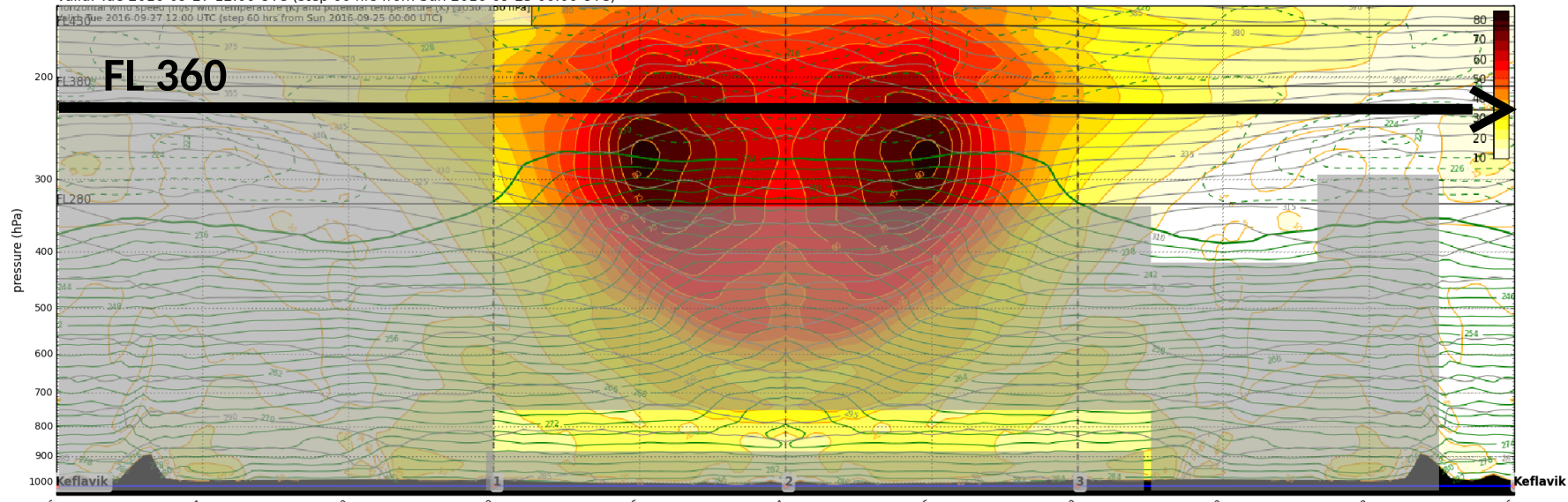
Horizontal Wind (m/s) Vertical Section
Valid: Tue 2016-09-27 12:00 UTC (step 60 hrs from Sun 2016-09-25 00:00 UTC)



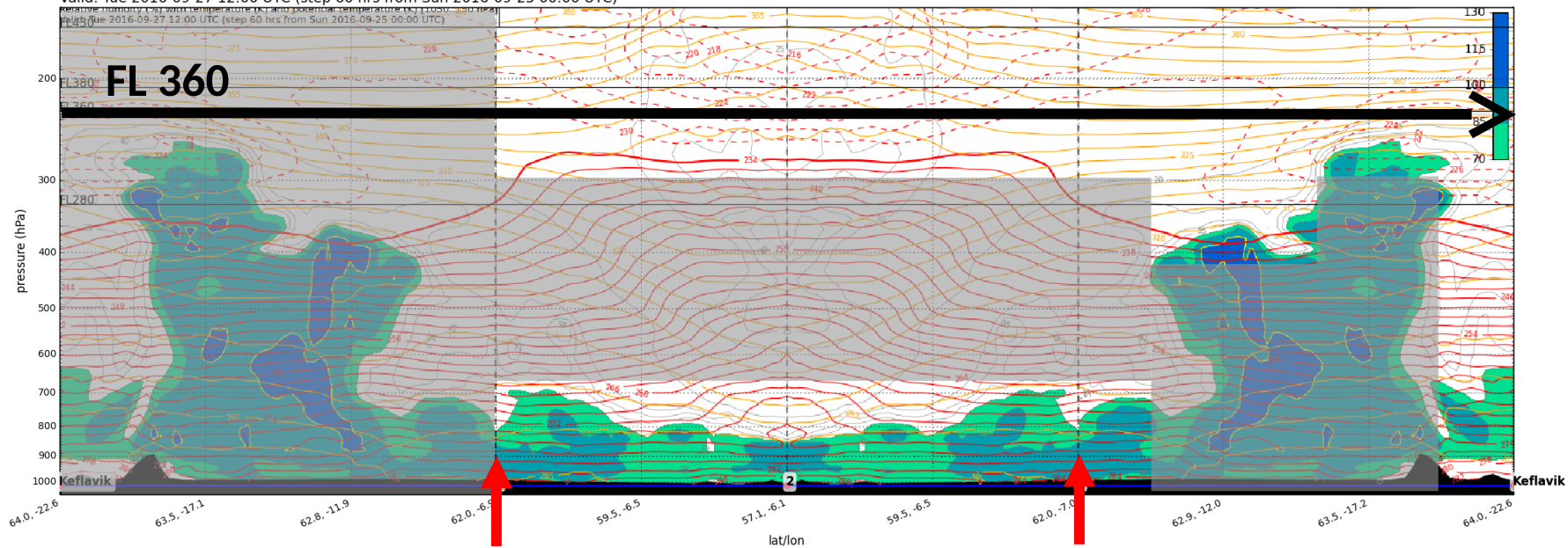
Potential Vorticity (PVU) Vertical Section (Northern Hemisphere)
Valid: Tue 2016-09-27 12:00 UTC (step 60 hrs from Sun 2016-09-25 00:00 UTC)



Horizontal Wind (m/s) Vertical Section
Valid: Tue 2016-09-27 12:00 UTC (step 60 hrs from Sun 2016-09-25 00:00 UTC)



Relative Humidity (%) Vertical Section
Valid: Tue 2016-09-27 12:00 UTC (step 60 hrs from Sun 2016-09-25 00:00 UTC)



Faroe

Faroe

Tuesday Mission (HALO)

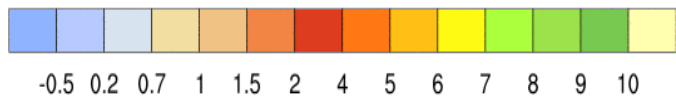
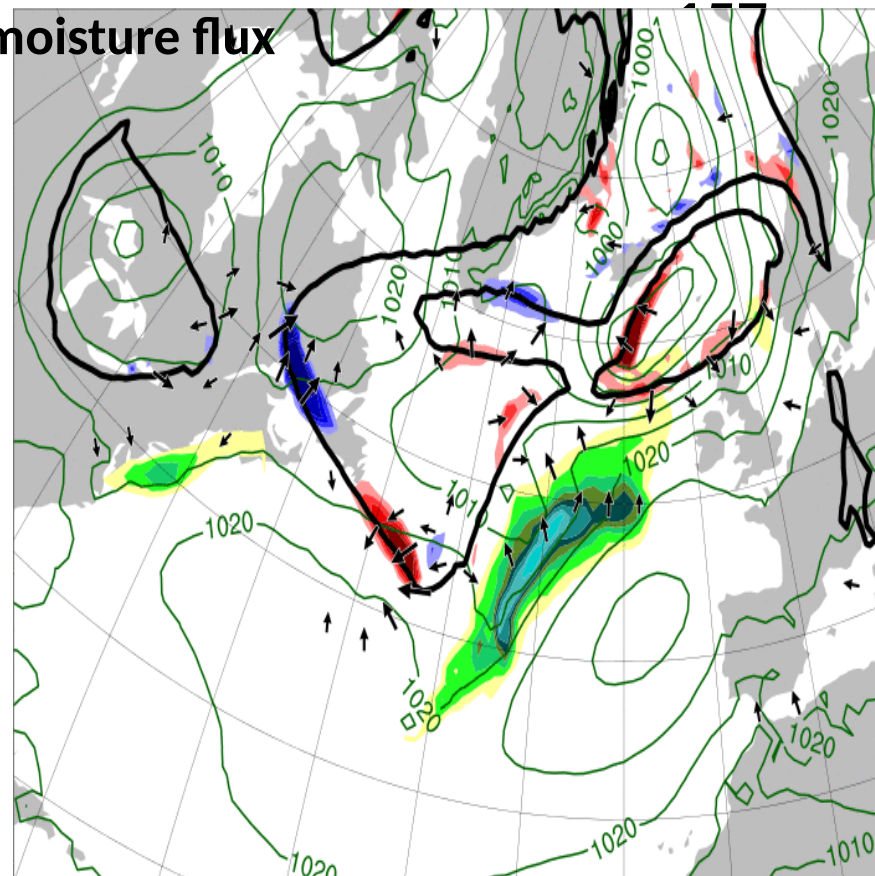
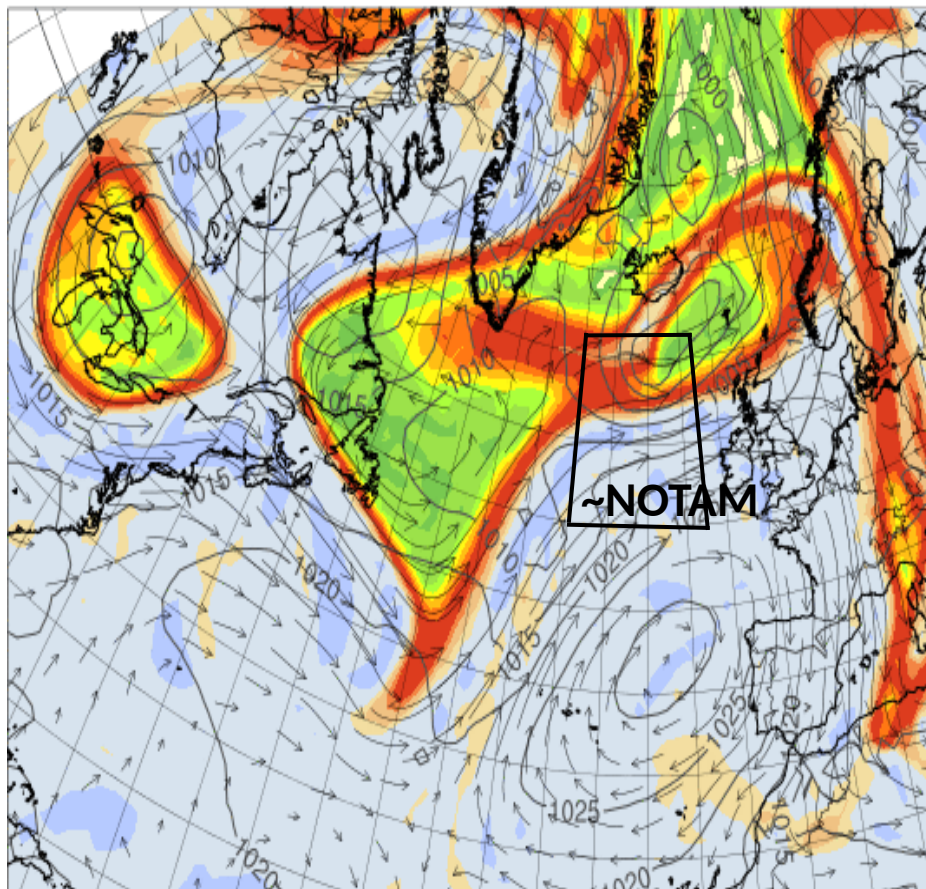
Possible HALO flight on Tuesday 27 September 2016

BT25/0
0Z

PV@325K at 20160927_15

VT27/

PV@320K, PV advection through div wind,
moisture flux

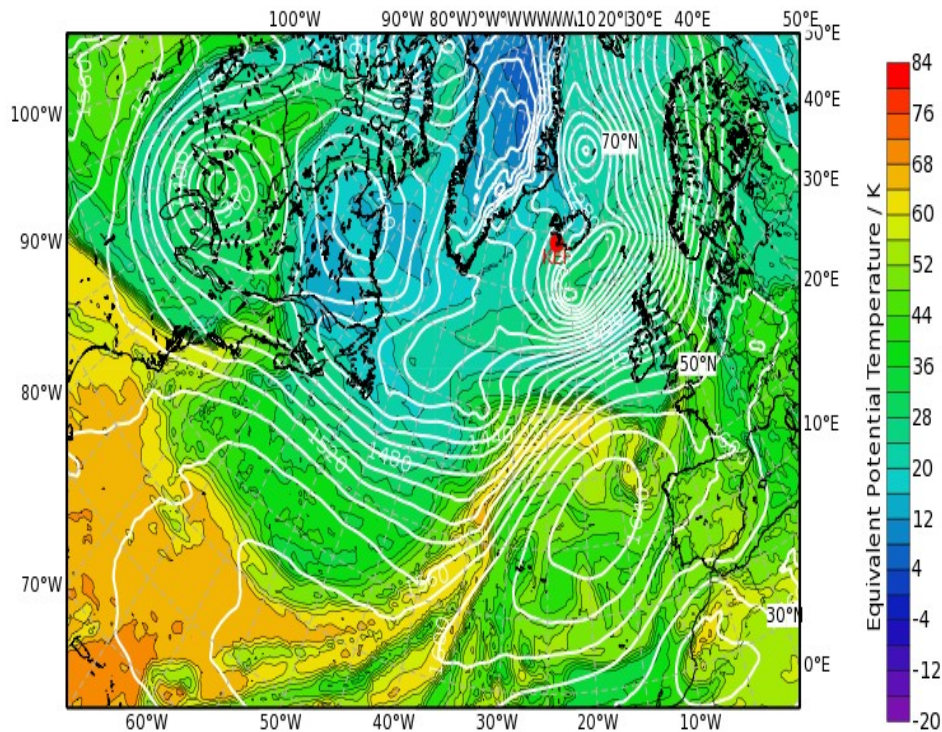


p.u.

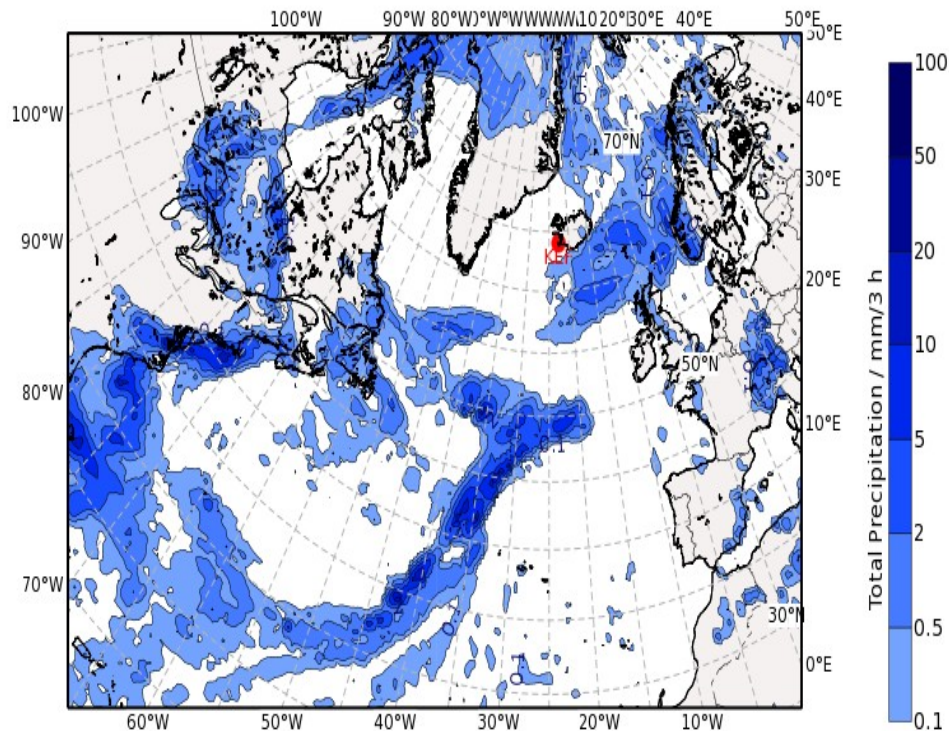
Possible HALO flight on Tuesday 27 September 2016

BT2
5/00
Z

Equivalent Potential Temperature (degC) & Streamlines at 850 hPa
Valid: Tue, 27 Sep 2016, 15 UTC (step 063 h from Sun, 25 Sep 2016, 00 UTC)



Total Precipitation, accumulated over 3 hours prior to valid time (mm)
Valid: Tue, 27 Sep 2016, 15 UTC (step 063 h from Sun, 25 Sep 2016, 00 UTC)



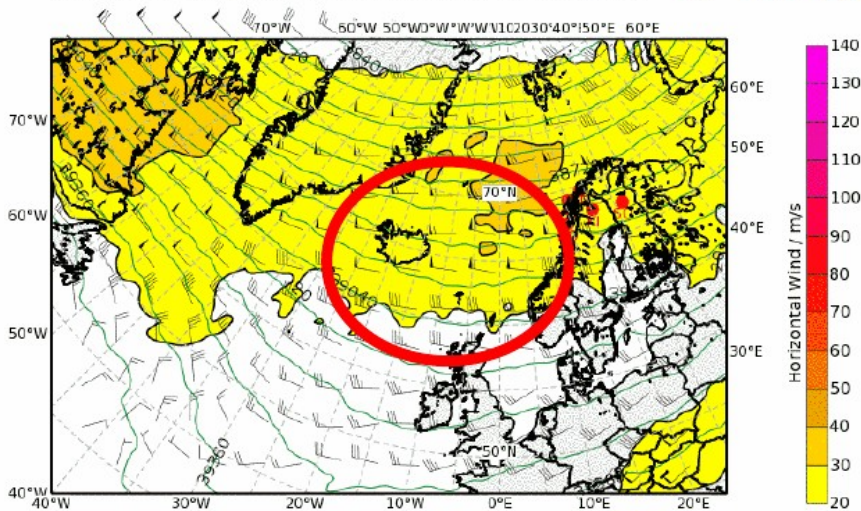
Gravity wave IOP on Wednesday

Gravity wave IOP 27/28 Sep 2016

Geopotential Height (m) & Horizontal Wind (m/s) at 3 hPa

Valid: Wed, 28 Sep 2016, 12 UTC (step 084 h from Sun, 25 Sep 2016, 00 UTC)

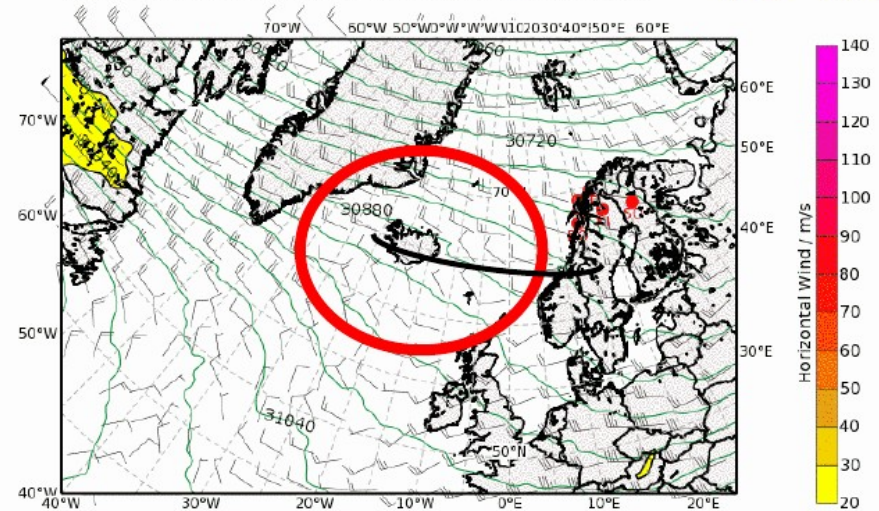
3 hPa



Geopotential Height (m) & Horizontal Wind (m/s) at 10 hPa

Valid: Wed, 28 Sep 2016, 12 UTC (step 084 h from Sun, 25 Sep 2016, 00 UTC)

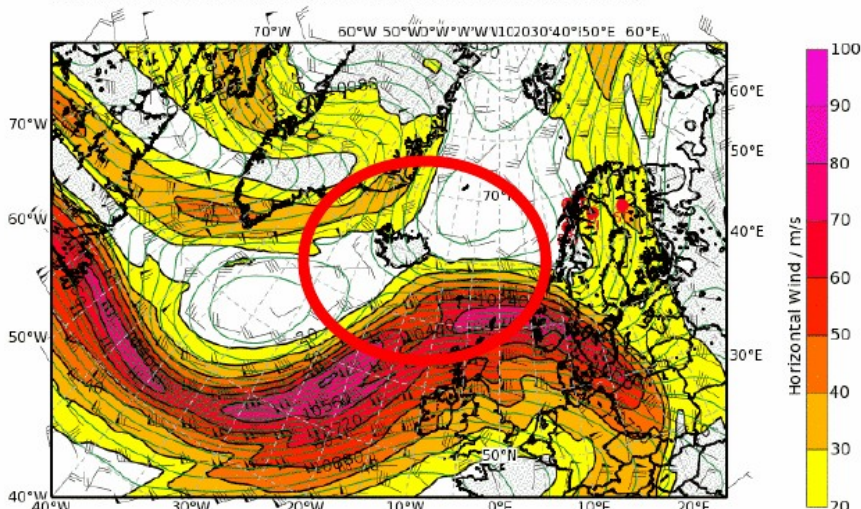
10 hPa



Geopotential Height (m) & Horizontal Wind (m/s) at 250 hPa

Valid: Wed, 28 Sep 2016, 12 UTC (step 084 h from Sun, 25 Sep 2016, 00 UTC)

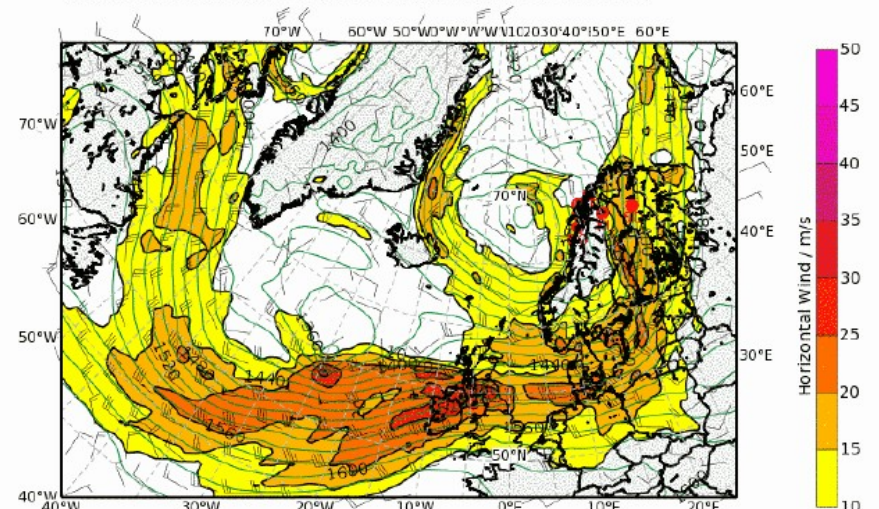
250 hPa



Geopotential Height (m) & Horizontal Wind (m/s) at 850 hPa

Valid: Wed, 28 Sep 2016, 12 UTC (step 084 h from Sun, 25 Sep 2016, 00 UTC)

850 hPa



A. Dörnbrack/M. Bramberger

Summary plans

- Exciting HALO mission tomorrow (10-20 UTC)
 - **Today: final flight plans, confirm NOTAM box**
- Coordinate flights of DLR-Falcon with UK FAAM BAE 146 (Tue 9-13 UTC)
- HALO mission on Tuesday afternoon
 - **Today: plan flights, define NOTAM box**
- Discuss Falcon flights on Wednesday tomorrow