
Grímsvötn 2011: Eldgosið frá veðurfræðilegu sjónarhorni

***Halldór Björnsson
Þórður Arason
(með aðstoð margra annarra)***

Eldgos í Grímsvötnum maí 2011

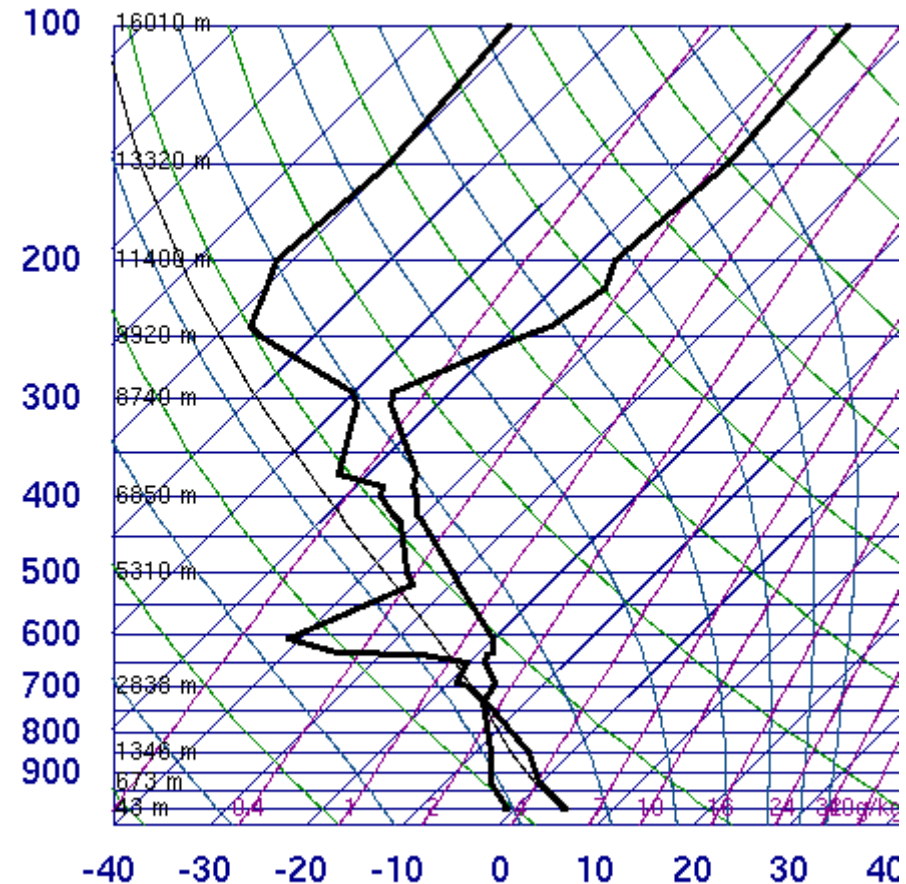
- **Gosið hófst þann 21. maí skömmu fyrir kl. 19 (?)**
 - **Gosinu lauk þann 28. maí**
 - **Meginfasi gossins stóð yfir í 2 sólarhringa eða fram á eftirmiðdag þann 23. maí**
 - Gríðarlegt magn af ösku dælt upp í lofthjúpin á þessu tímabili
 - Neyðarástand vegna öskufalls í nærsveitum fram eftir vikunni
 - Flugvöllum lokað í Evrópu þann 24. maí
-

Mjög öflugt gos

- **Veðrahvörf í um 9 km hæð**
- **Mökkurinn fór fljótt upp fyrir veðrahvörf og upp í heiðhvolf**
- **Mökkurinn varð strax nokkuð tvískiptur**

— Efri og neðri hluti

04018 BIKF Keflavíkurflugvöllur



00Z 22 May 2011

University of Wyoming

Reuters 21. maí kl 22:50



Steinunn Jakobsd 21. maí kl 21:50



Matthew Roberts 22. maí kl 09:50



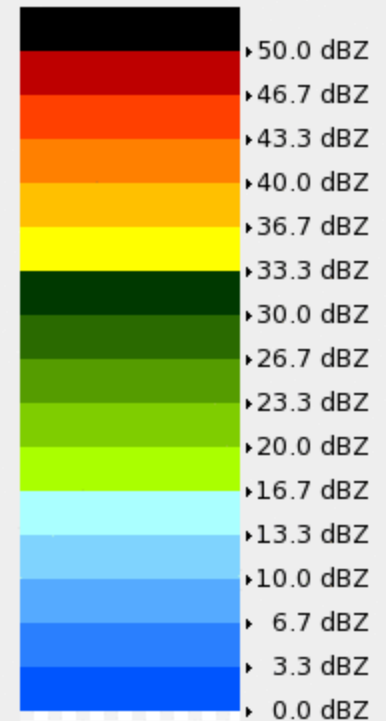
Matthew Roberts 22. maí kl 09:19



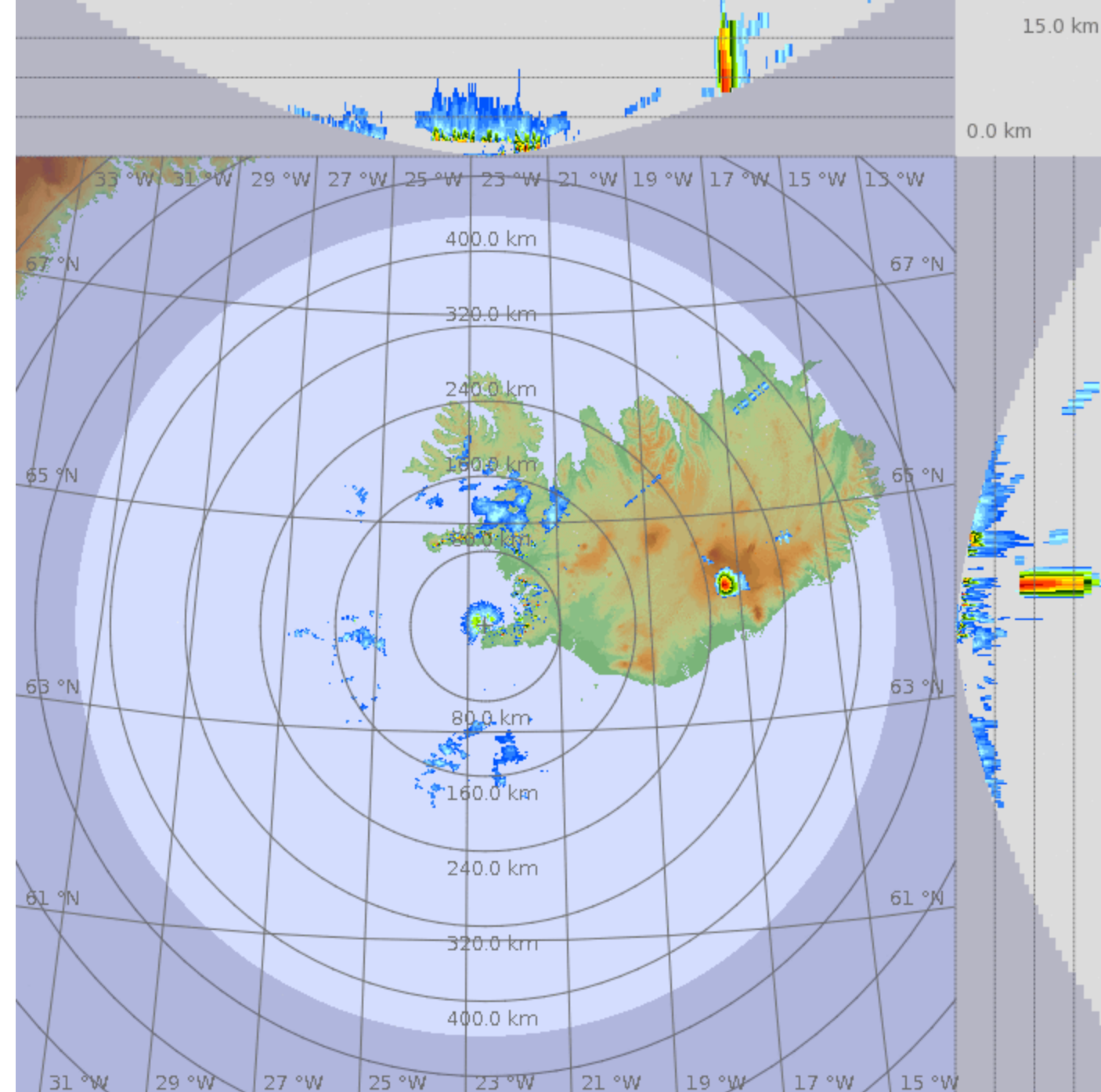
15.0 km

MAX (dBZ)
19:47 / 21-May-2011
Keflavik

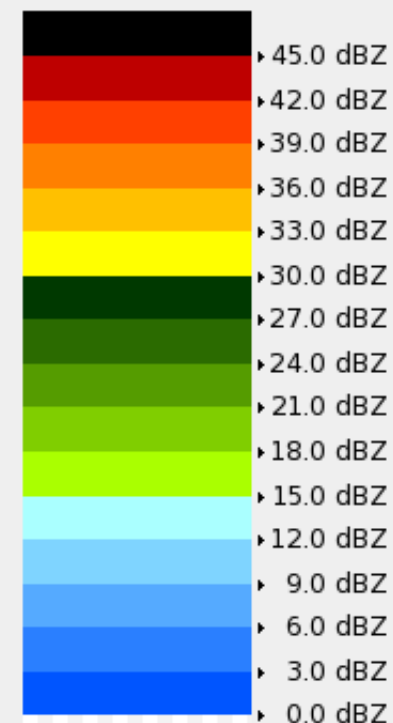
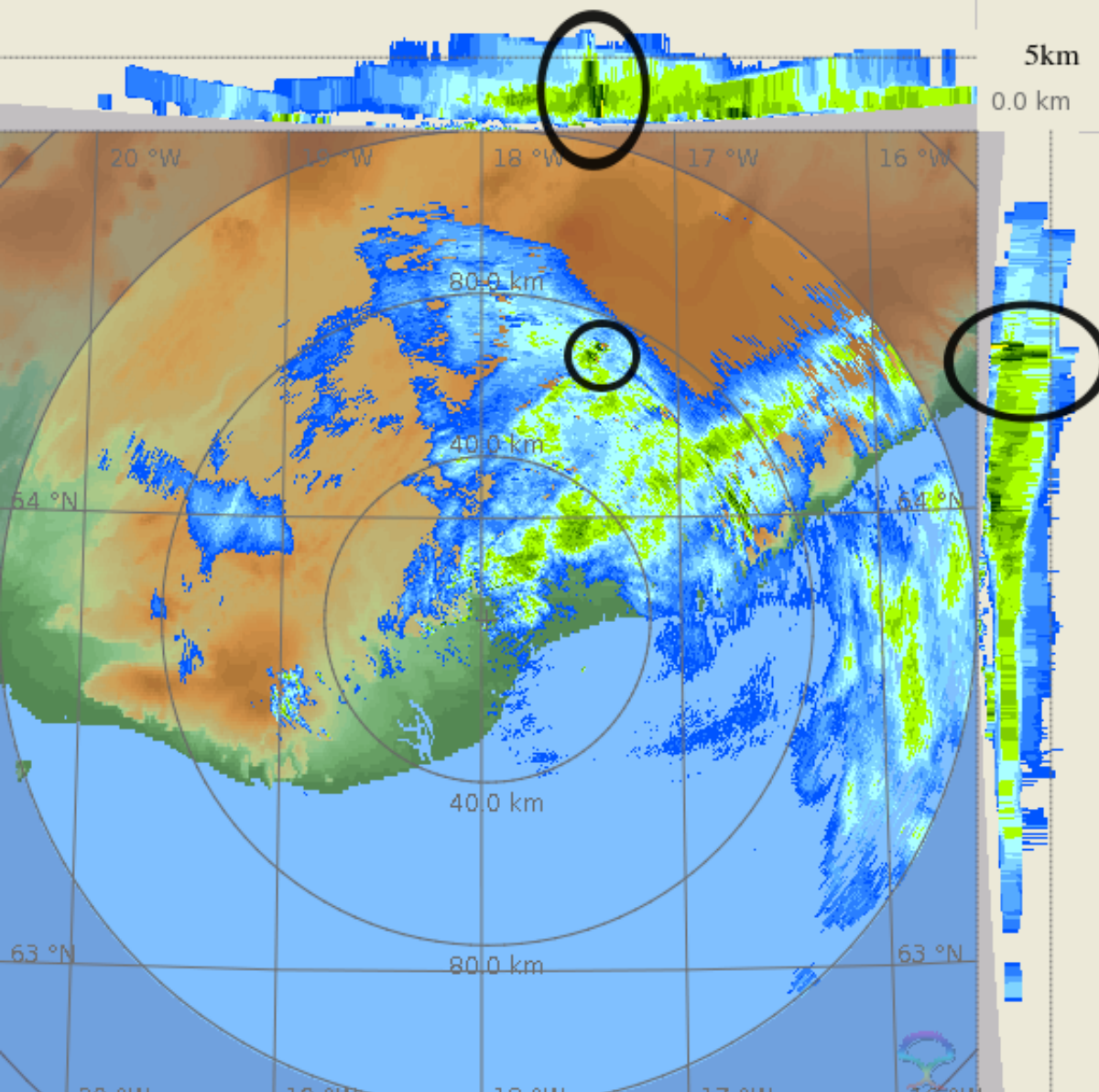
0.0 km



Pdf File: max_480.max
Clutter Filter: None
Time sampling: 50
PRF: 1200 Hz
Range: 500 km
Height: 0.000 km to 15.000 km
Hor Res: 1.667 km/pixel
Vert Res: 0.150 km/pixel
Data: Radar Data
Rainbow® SELEX-SI

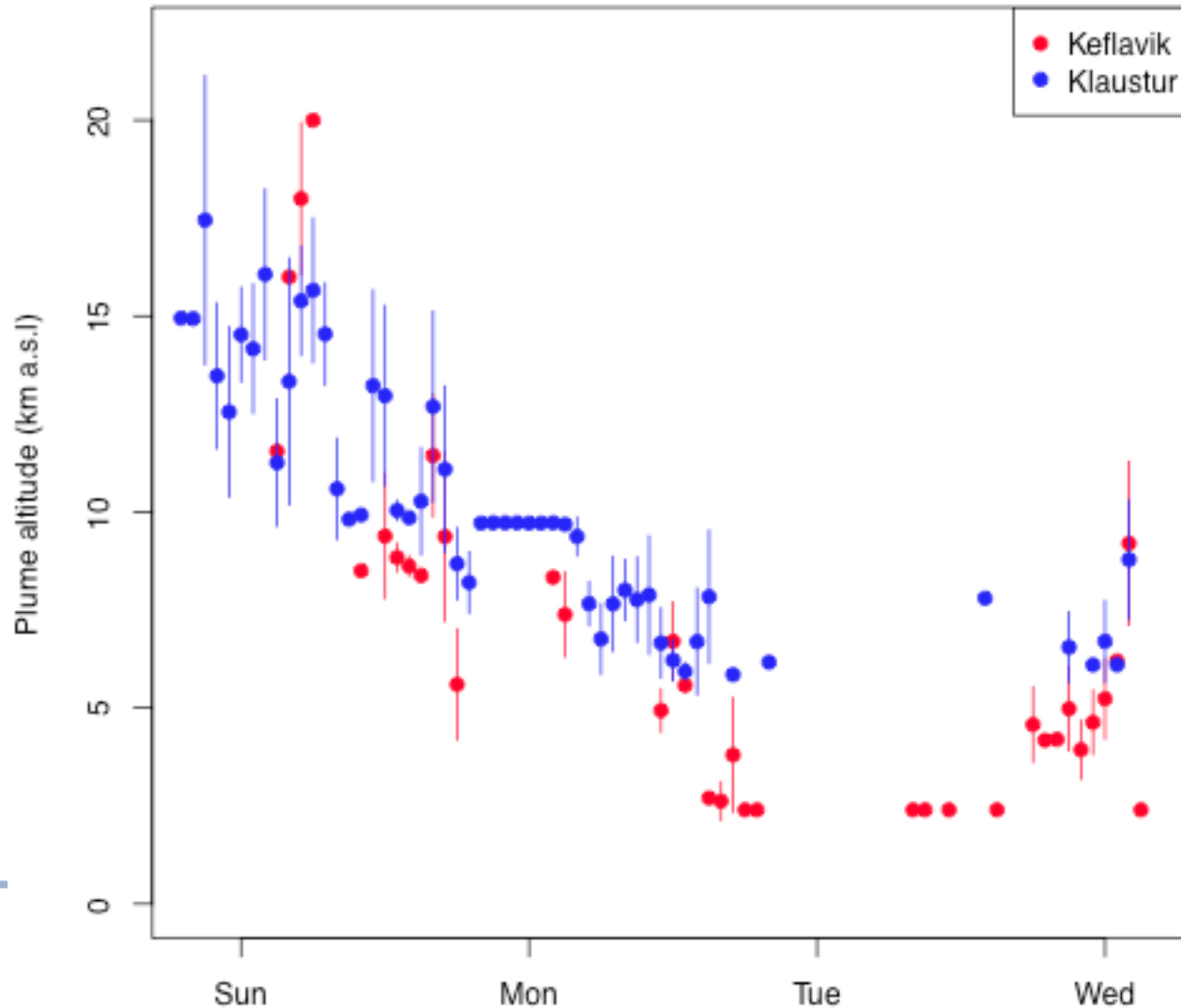


MAX (dBZ)
14:00 / 23-May-2011
Meteor 50 DPX

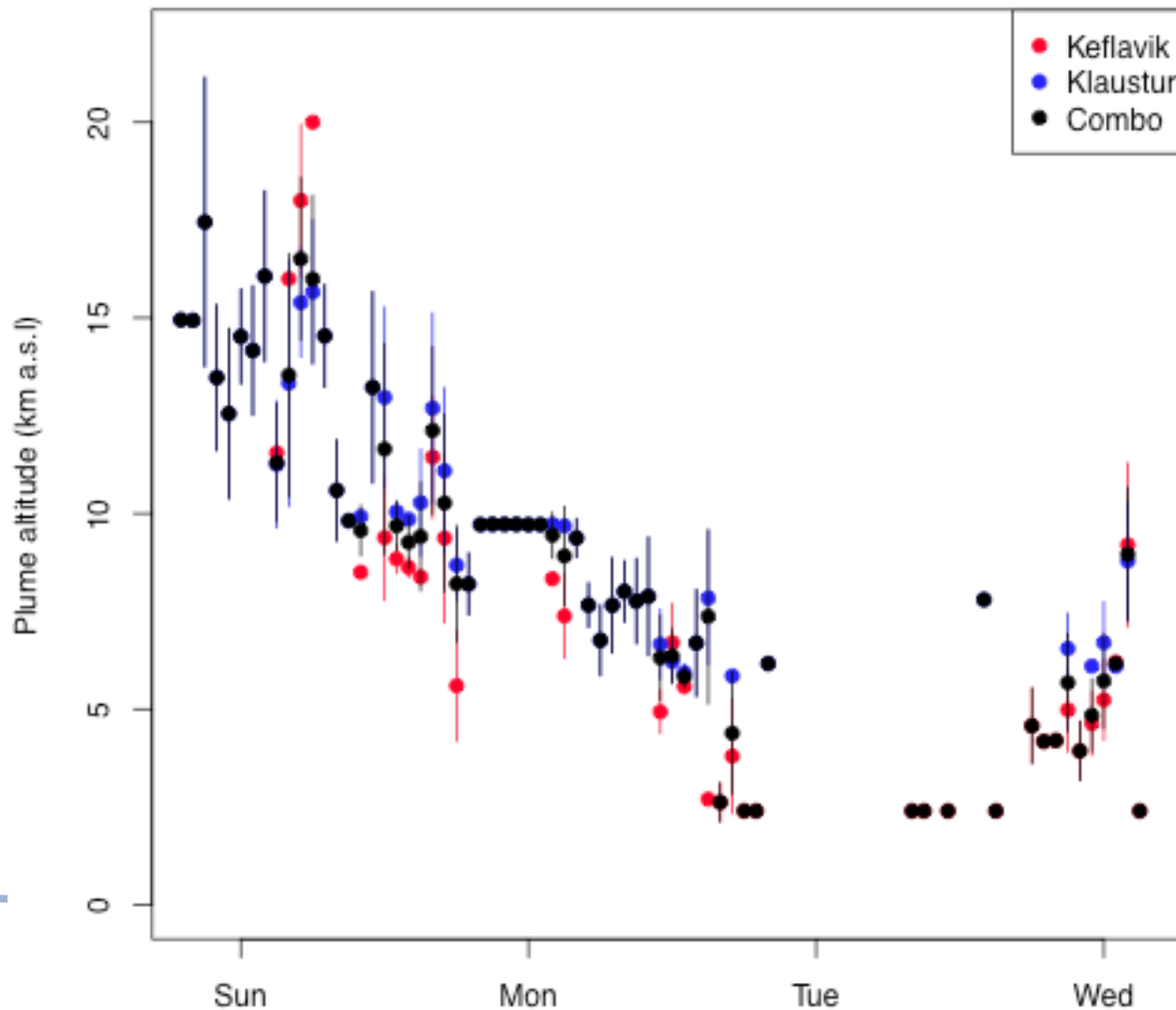


Pdf File: Grimsvoth_2011.max
Clutter Filter: Doppler Num 12
Time sampling: 31
PRF: 550 Hz
Range: 120 km
Height: 0.000 km to 20.000 km
Hor Res: 0.480 km/pixel
Vert Res: 0.133 km/pixel
Data: Radar Data
Rainbow® SELEX-SI

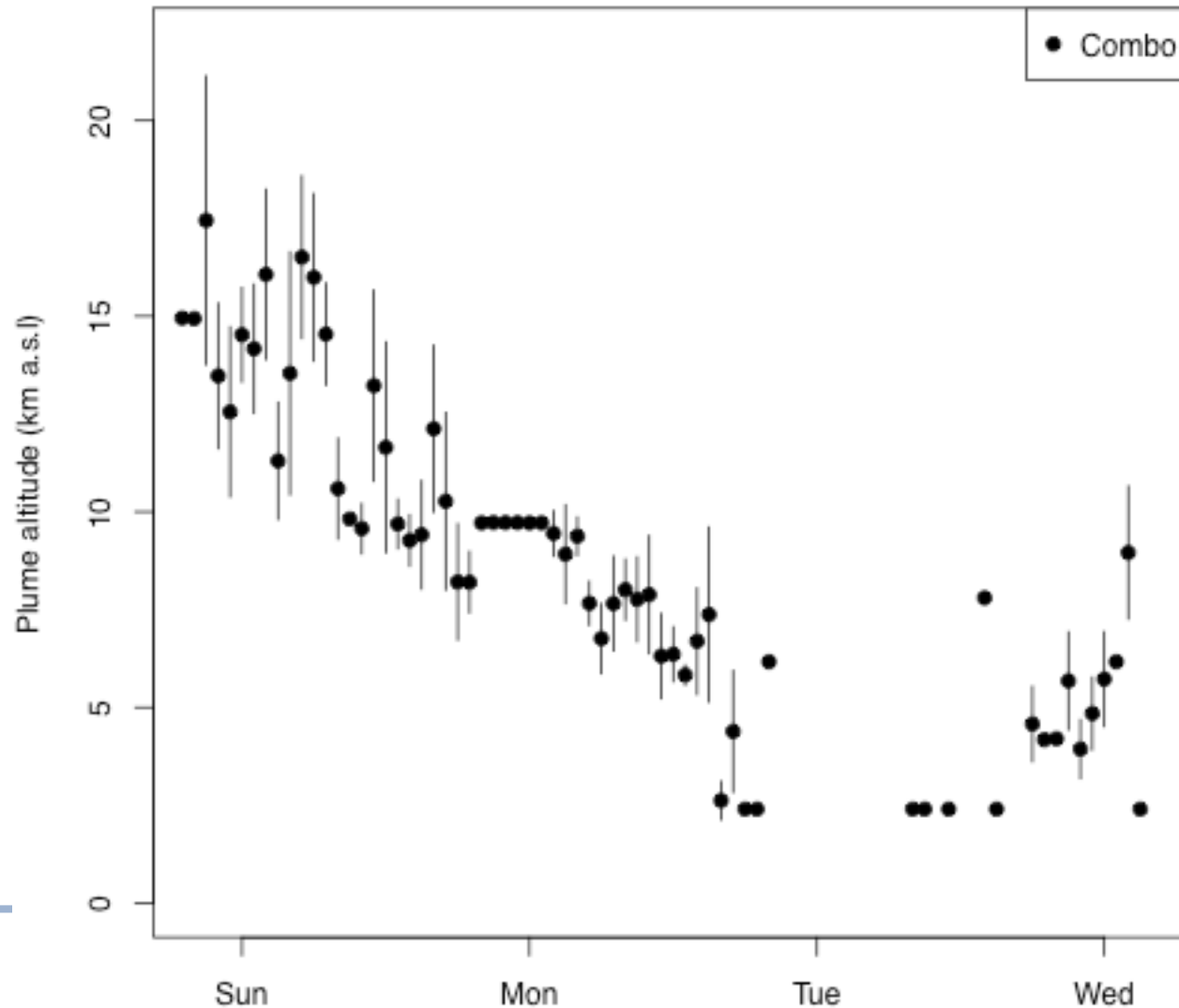
Hæð makkar á veðursjá

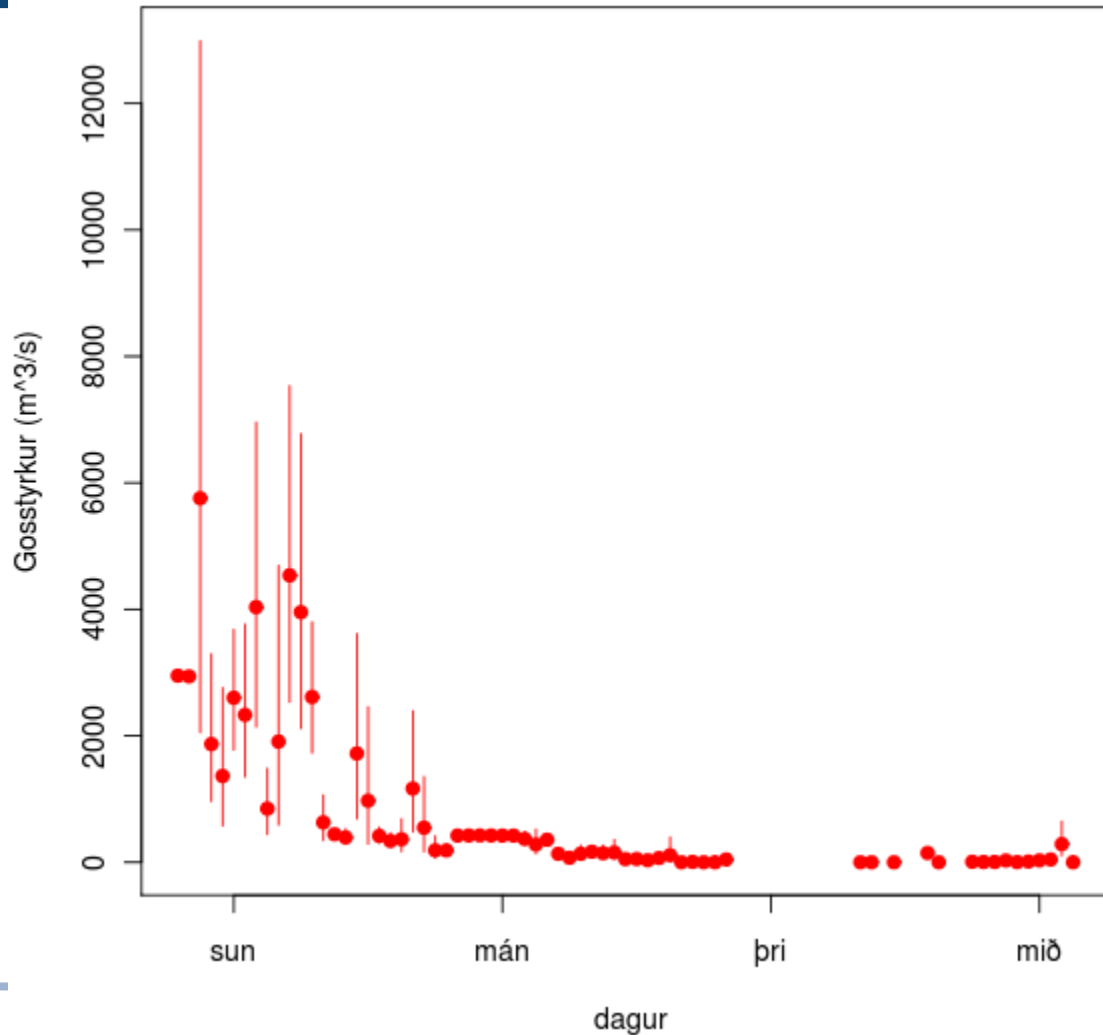


Hæð makkar á veðursjá

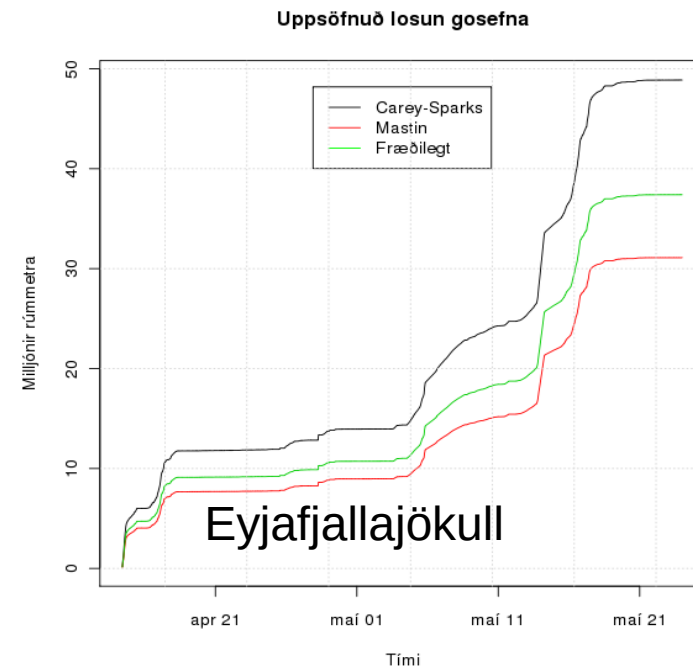
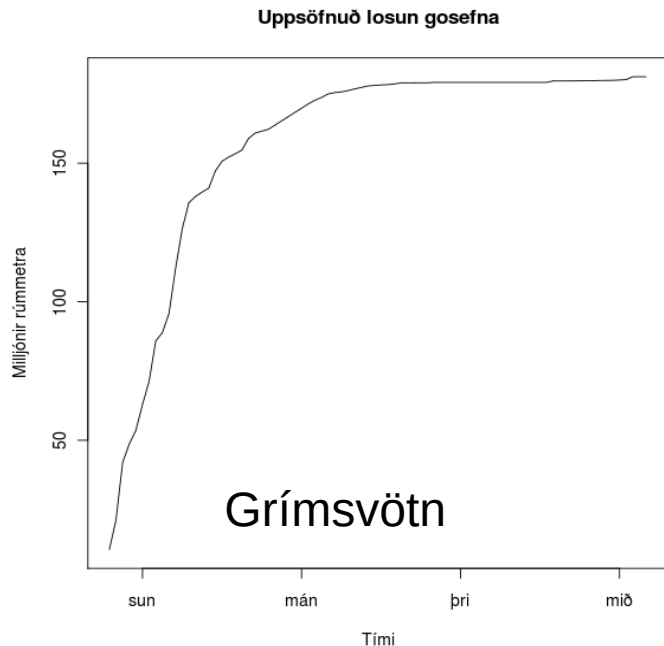


Hæð makkar á veðursjá





Skv Carey Sparks losa Grímsvötn þrefalt meira en Eyjafjallajökull!



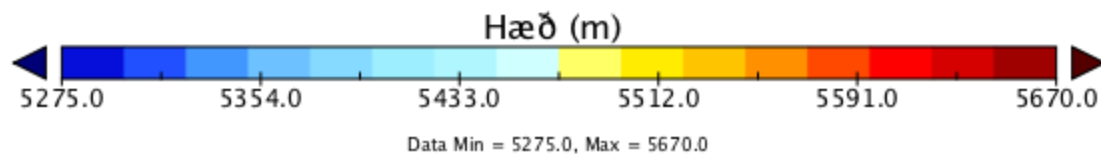
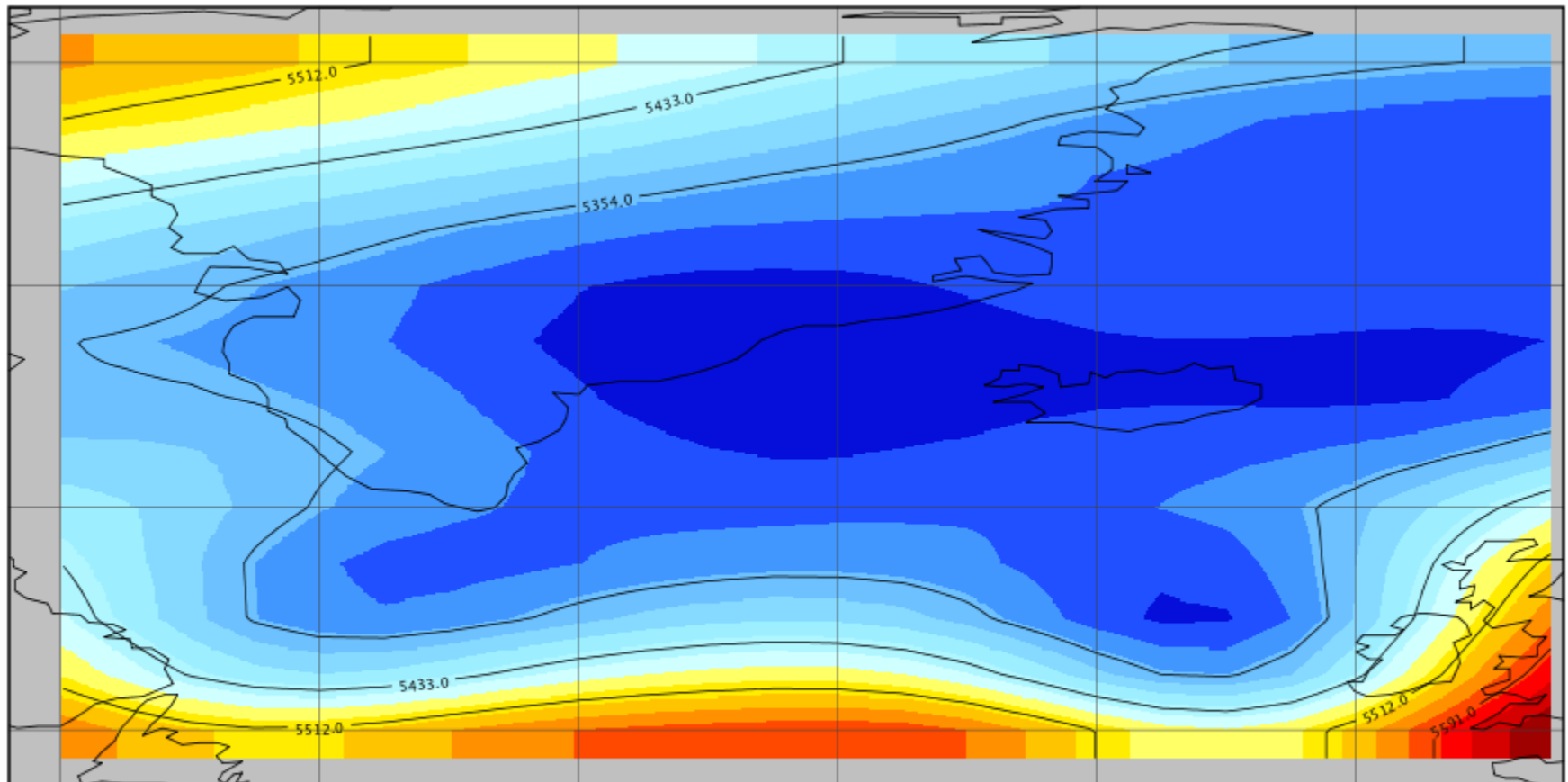
- **Rétt að taka þessum niðurstöðum með mikilli varúð**

— **Betri líkareikningar fyrirhugaðir**

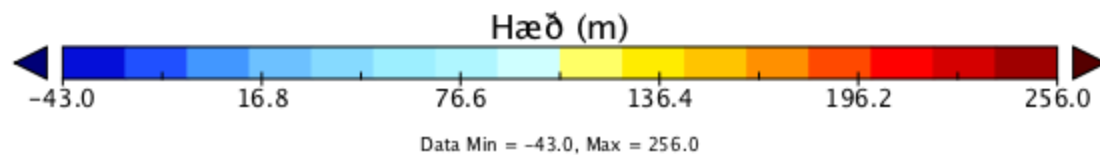
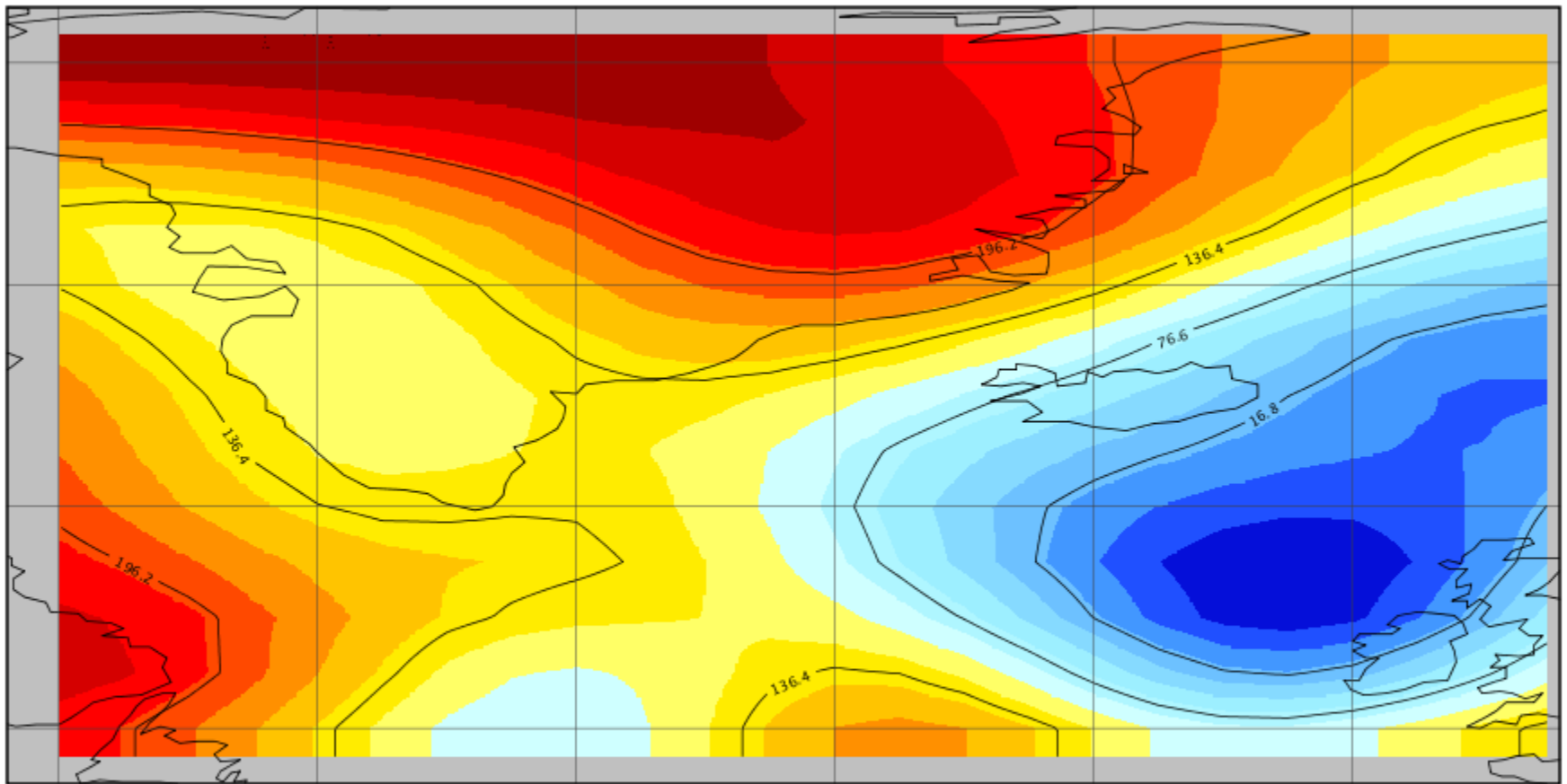
Veðurlag fyrstu daga gossins

- **Hægviðri eða suðlægar áttir í háloftum**
 - Gosstrókur í háloftum rak til NV
 - Öskufall víða um norðanvert landið
 - **Norðlægar áttir nærri yfirborði**
 - Mikið öskufall suðvestan við eldstöðina
-

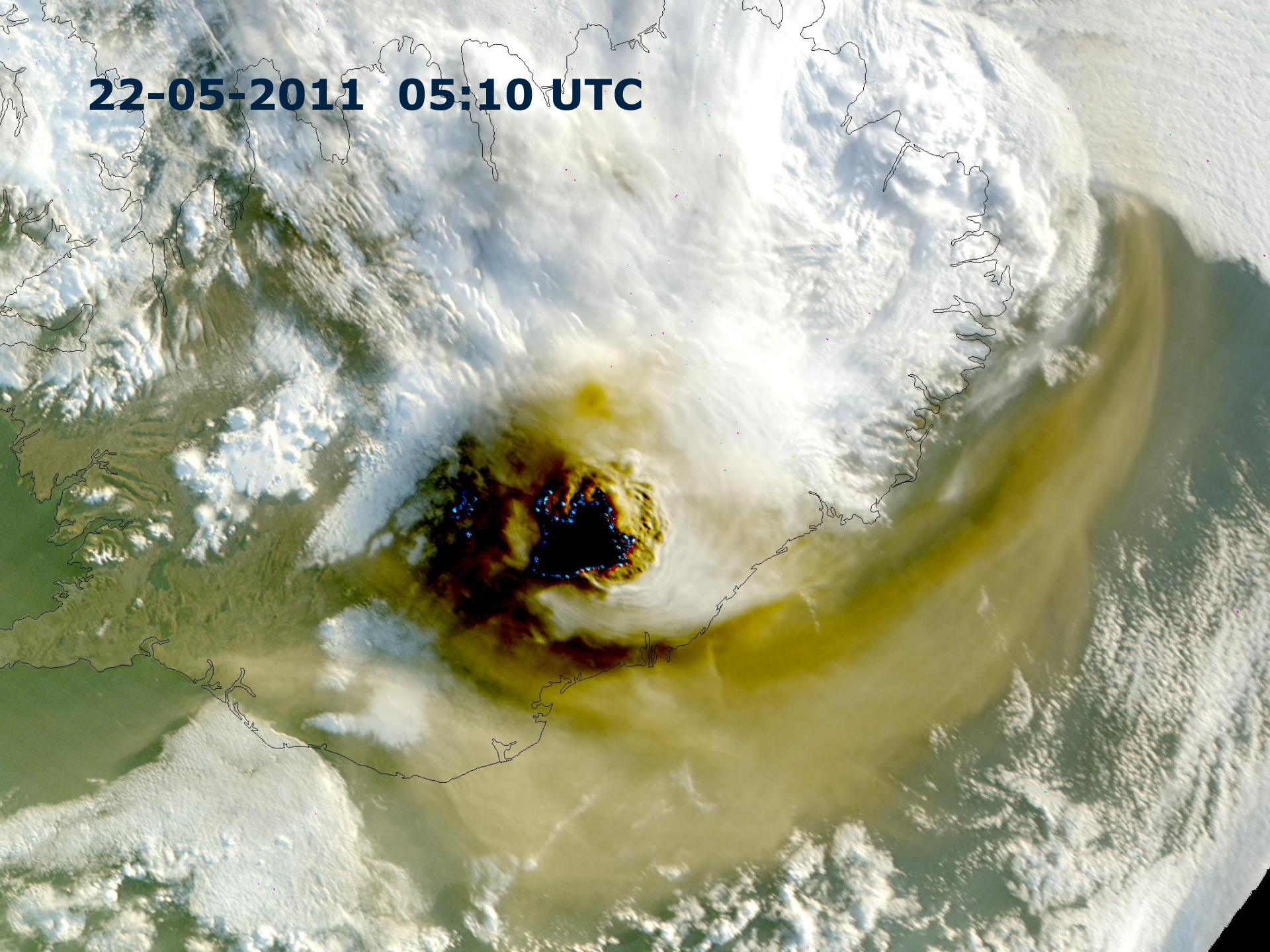
Hæð 500hPa flatar kl 18Z þann 21. maí

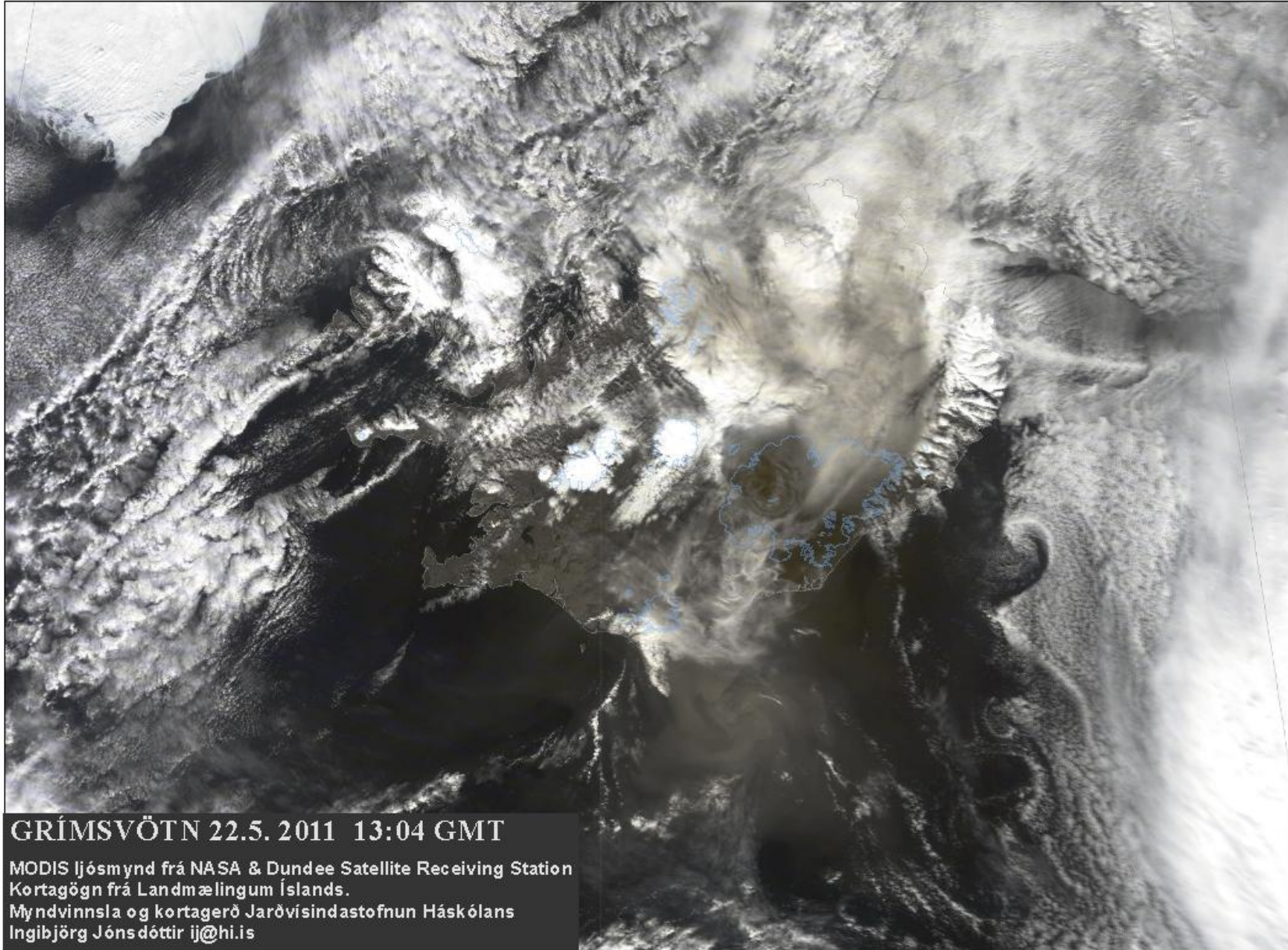


Hæð 1000hPa flatar kl. 18Z þann 21. maí



22-05-2011 05:10 UTC



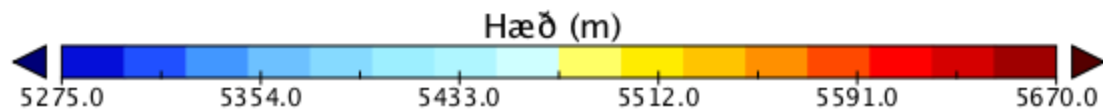
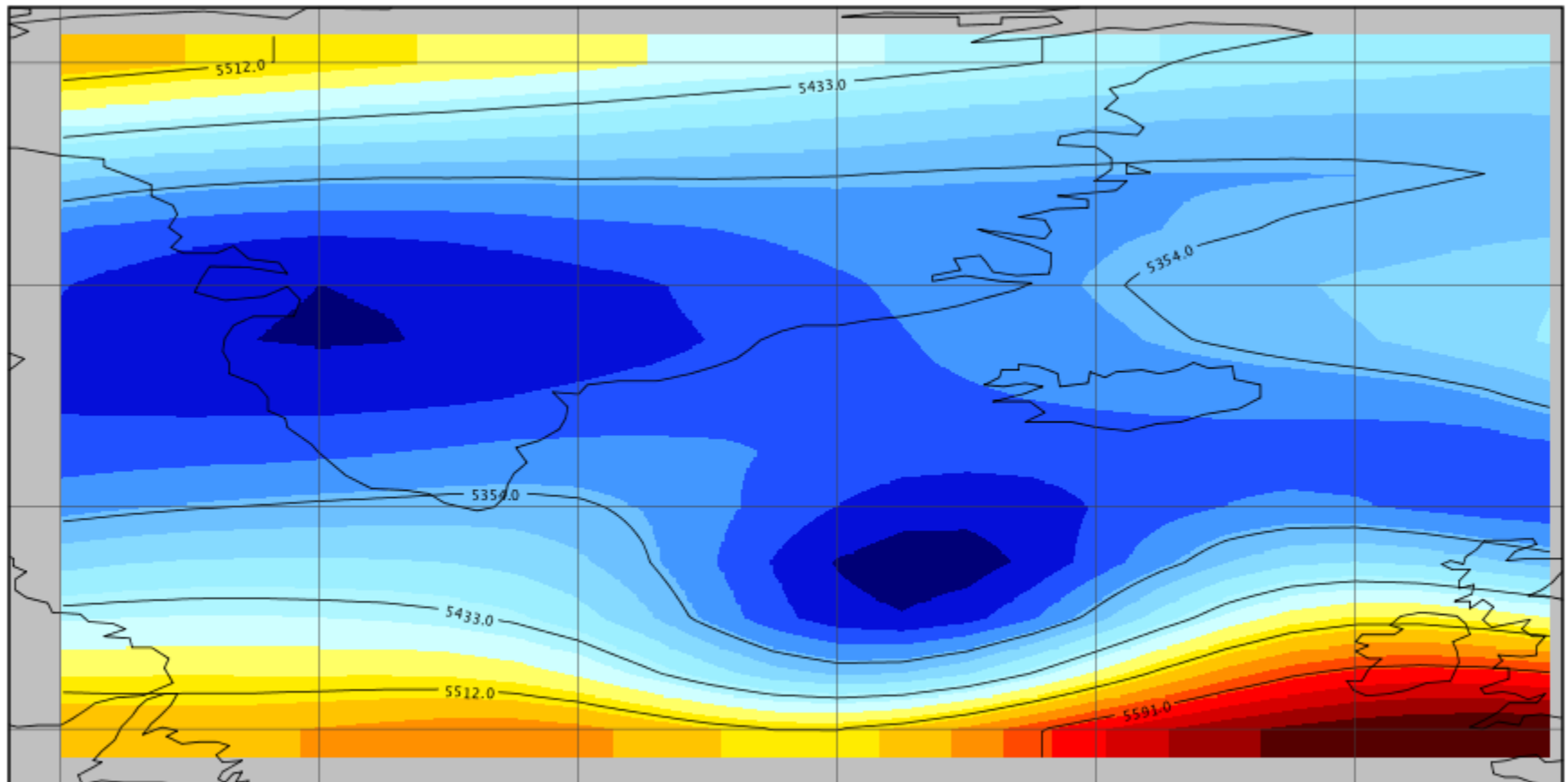


GRÍMSVÖTN 22.5. 2011 13:04 GMT

MODIS ljósmynd frá NASA & Dundee Satellite Receiving Station
Kortagögn frá Landmælingum Íslands.

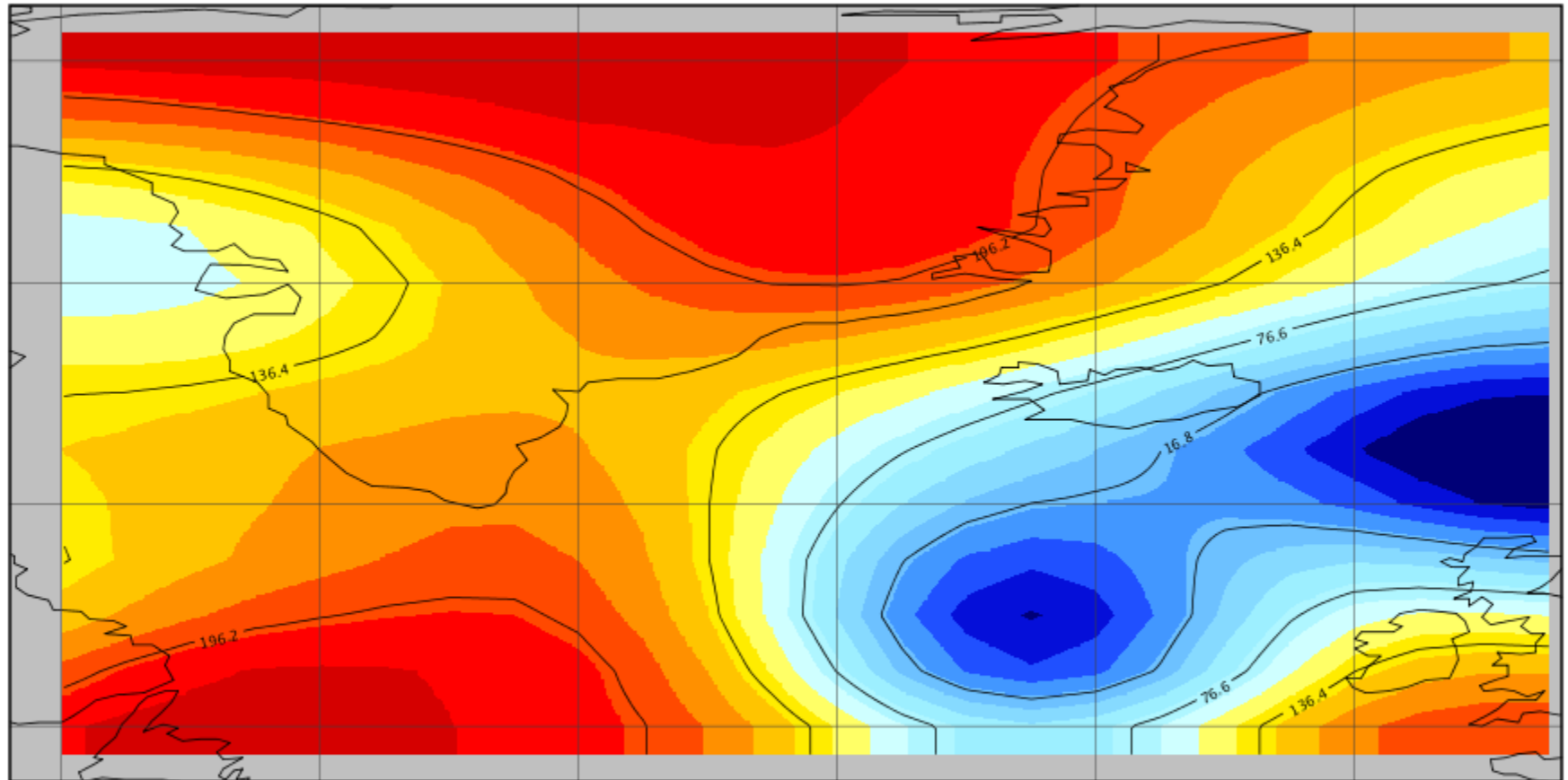
Myndvinnsla og kortagerð Jarðvísindastofnun Háskólans
Ingibjörg Jónsdóttir ij@hi.is

Hæð 500hPa flatar kl 18Z þann 22 maí



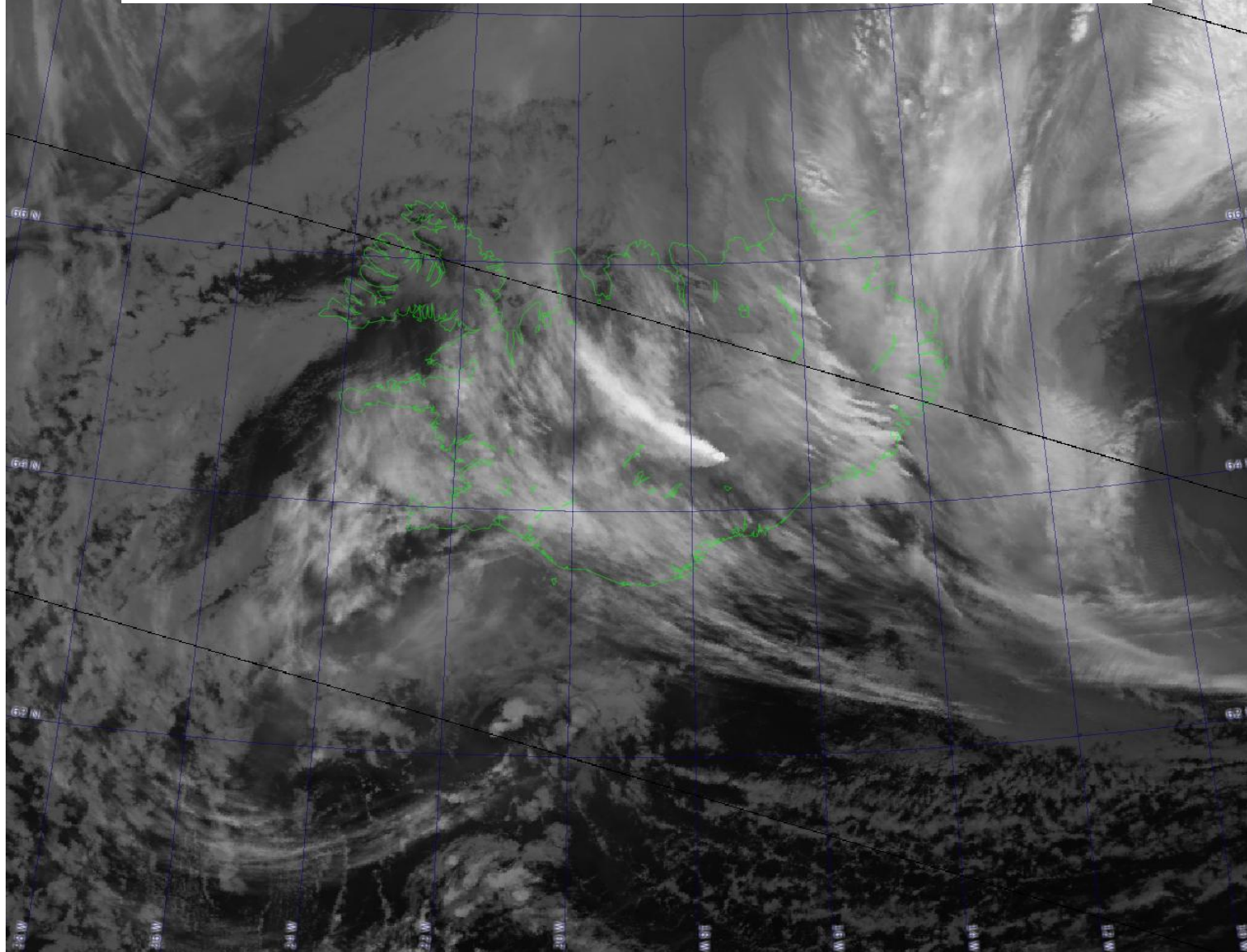
Data Min = 5260.0, Max = 5698.0

Hæð 1000hPa flatar kl. 18Z þann 22. maí



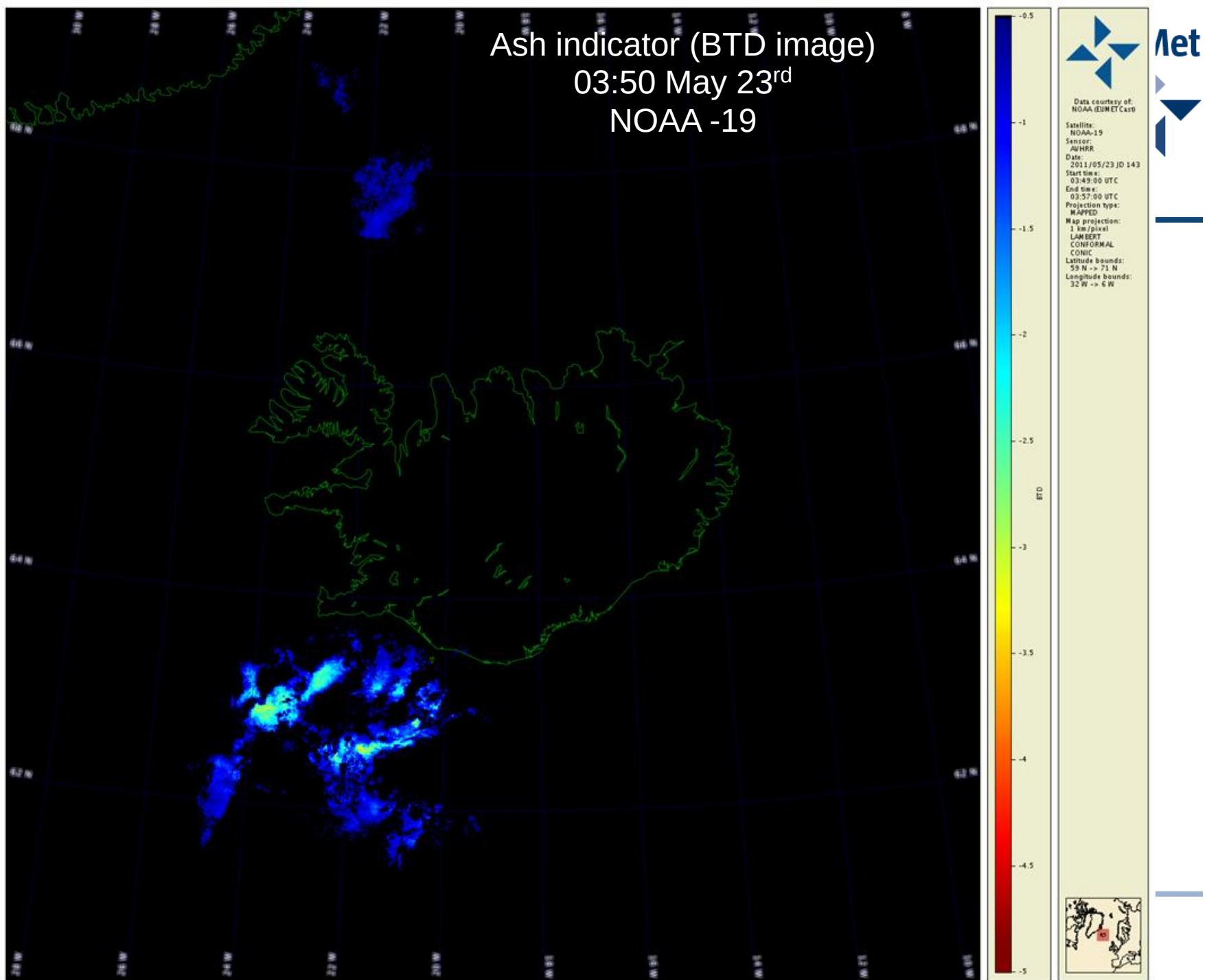
Data Min = -79.0, Max = 232.0

Monday May 23rd at 03:50 UTC
(NOAA 19 AVHRR)



Ash indicator (BTD image)

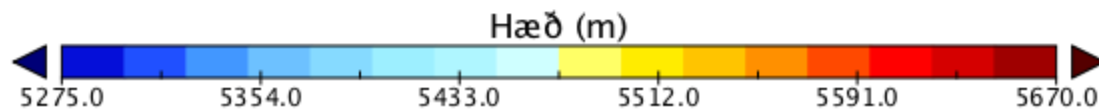
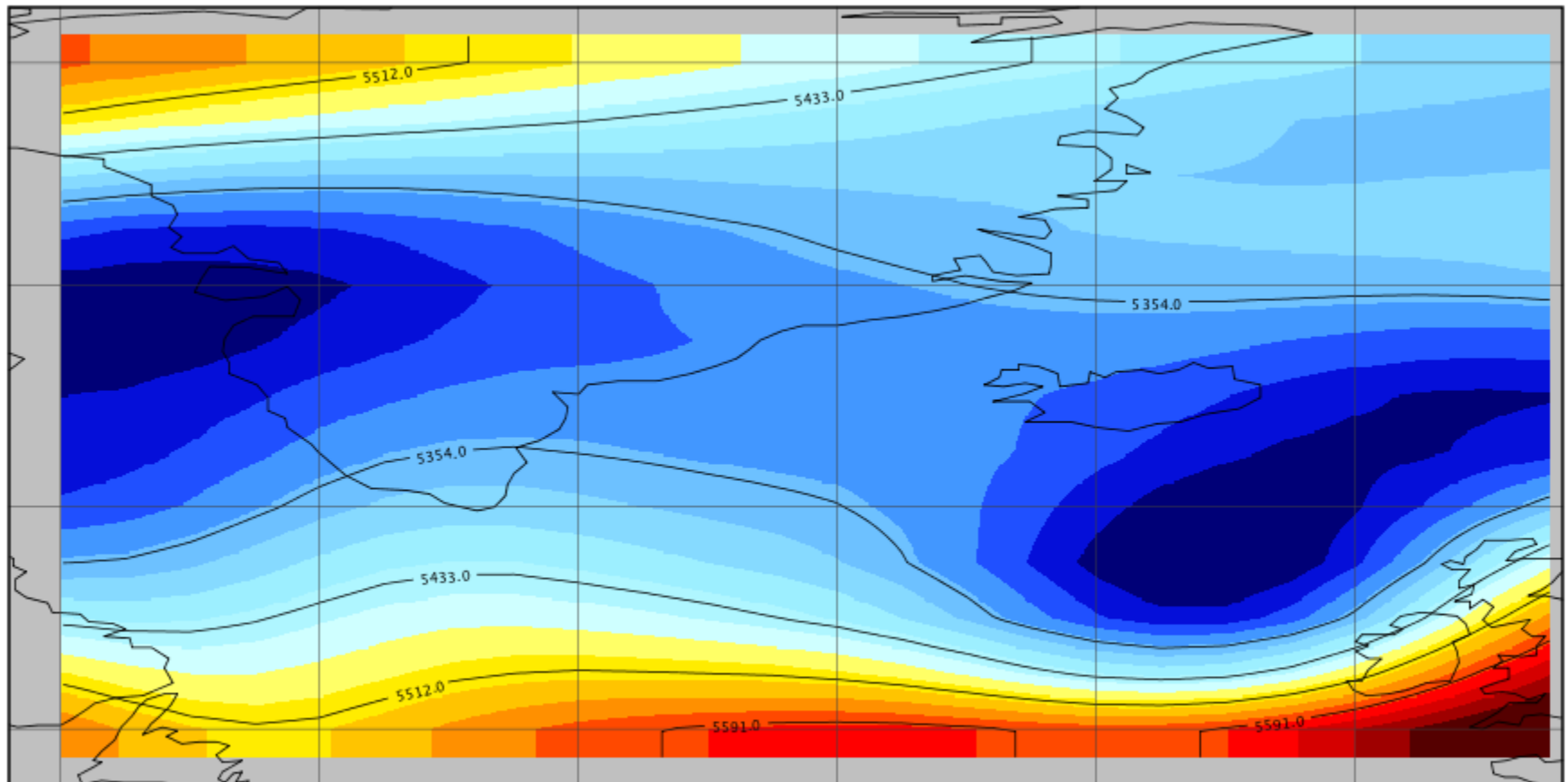
03:50 May 23rd
NOAA -19



Vindar snúast til norðvesturs

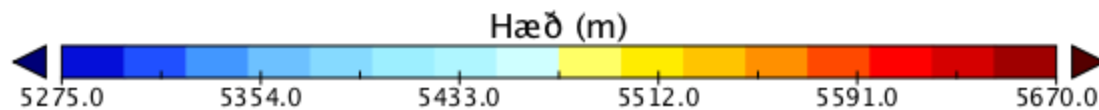
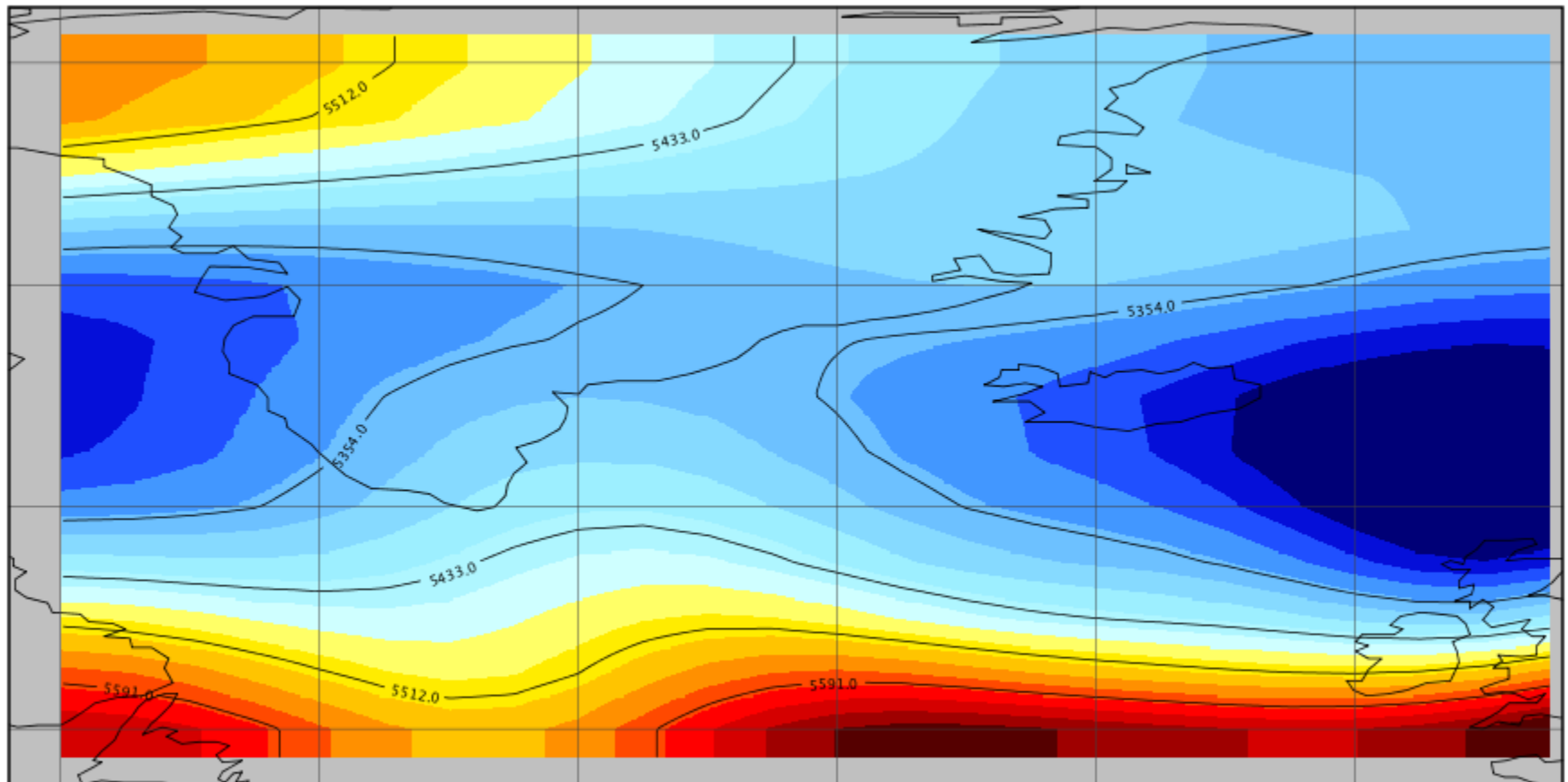
- **Mánudaginn 23 snerist vindur í háloftum yfir Vatnajökli til NV áttar**
 - **Vindar við yfirborð snerust um síðir til norðlægra átta**
-

Hæð 500 hPa flatar kl 06Z þann 23. maí



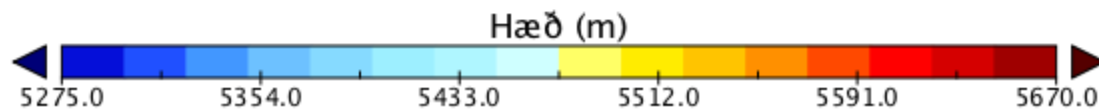
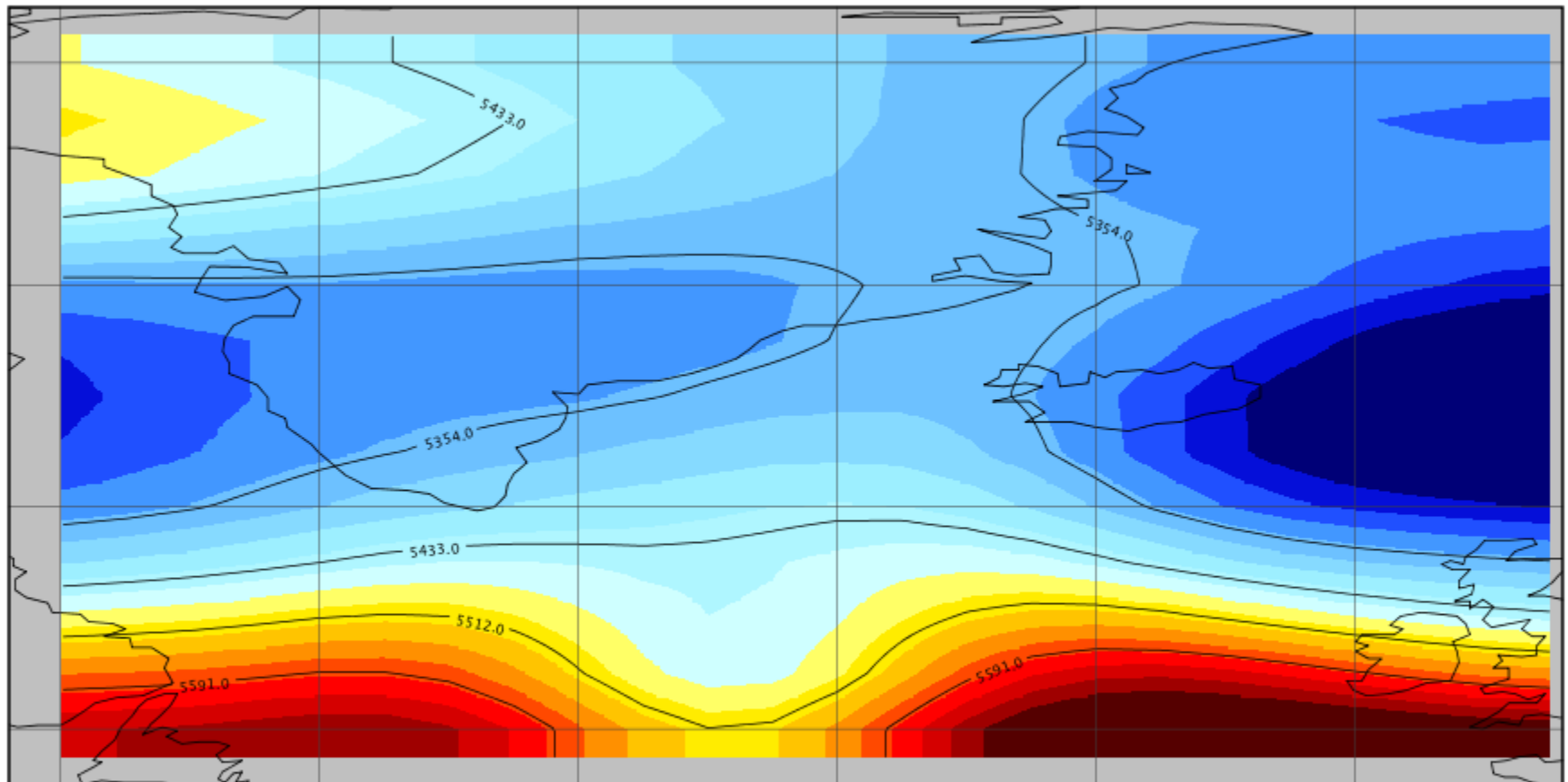
Data Min = 5237.0, Max = 5724.0

Hæð 500 hPa flatar kl 18Z þann 23. maí



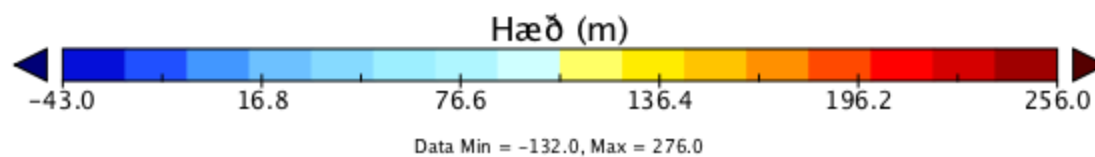
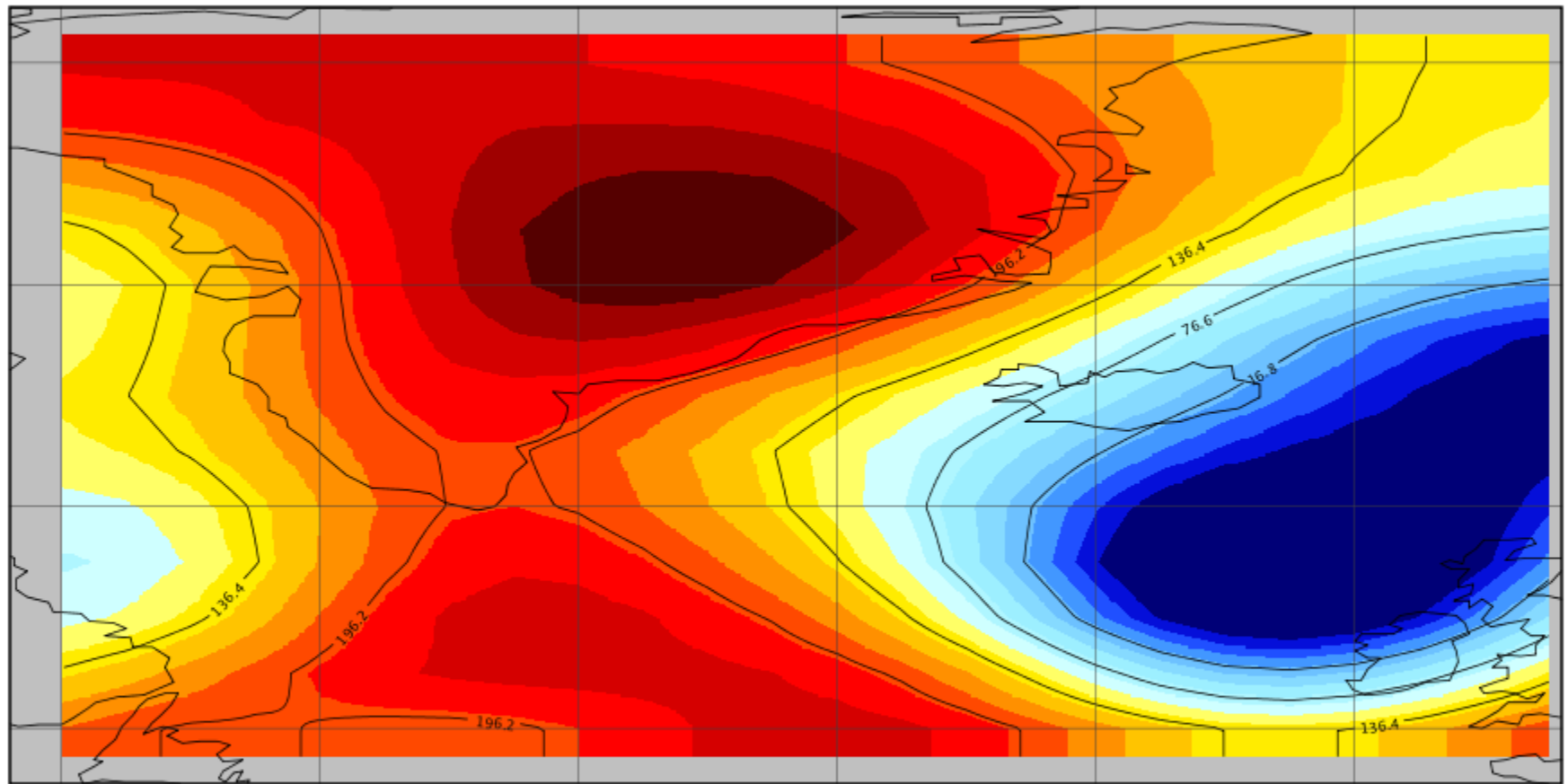
Data Min = 5205.0, Max = 5704.0

Hæð 500 hPa flatar kl 06Z þann 24. maí

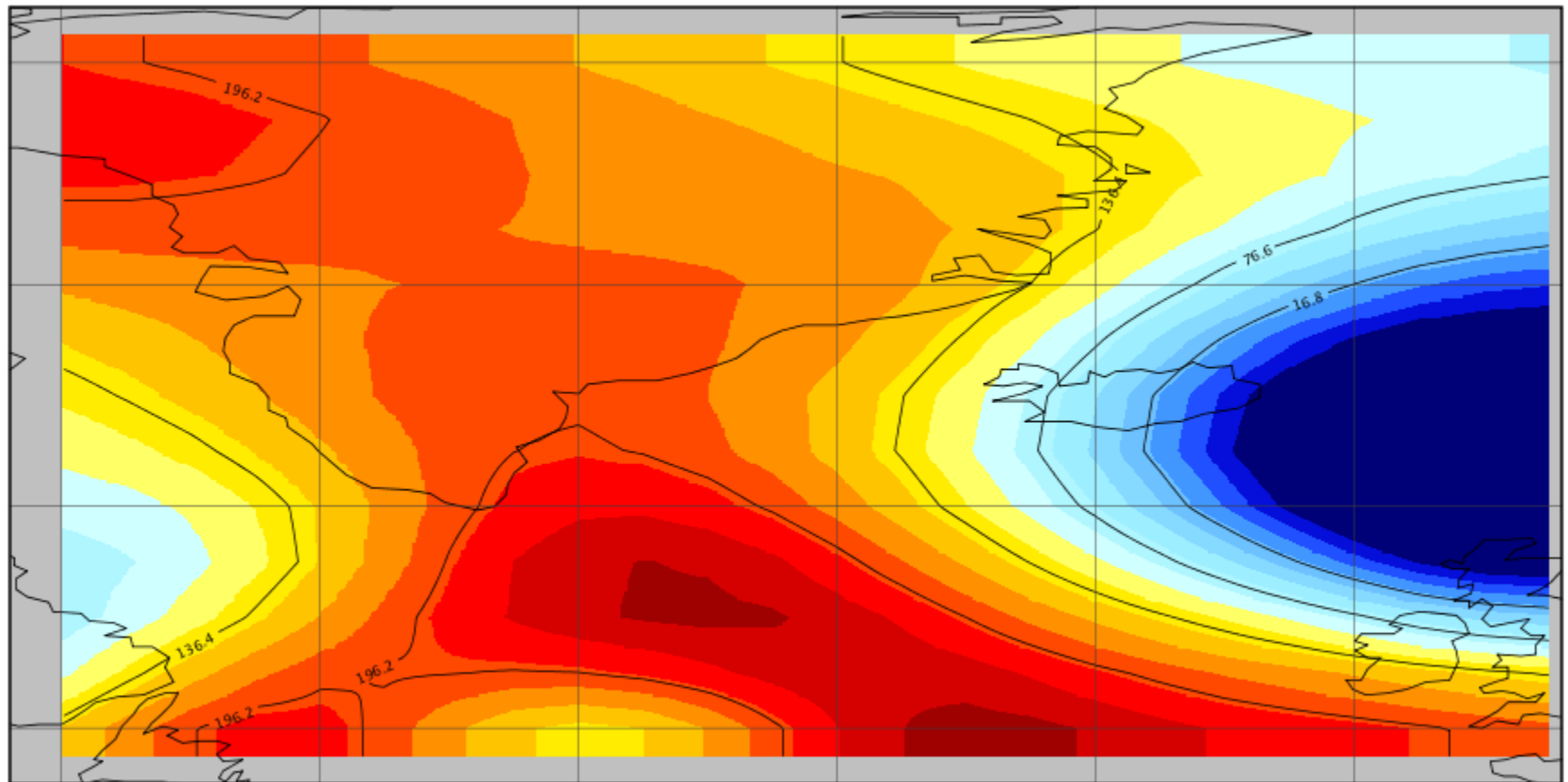


Data Min = 5183.0, Max = 5740.0

Hæð 1000hPa flatar kl. 06Z þann 23. maí

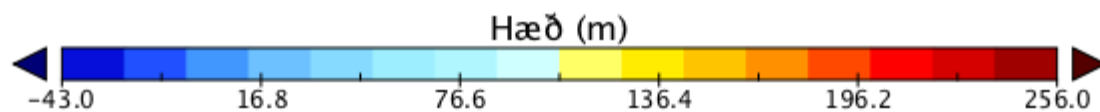
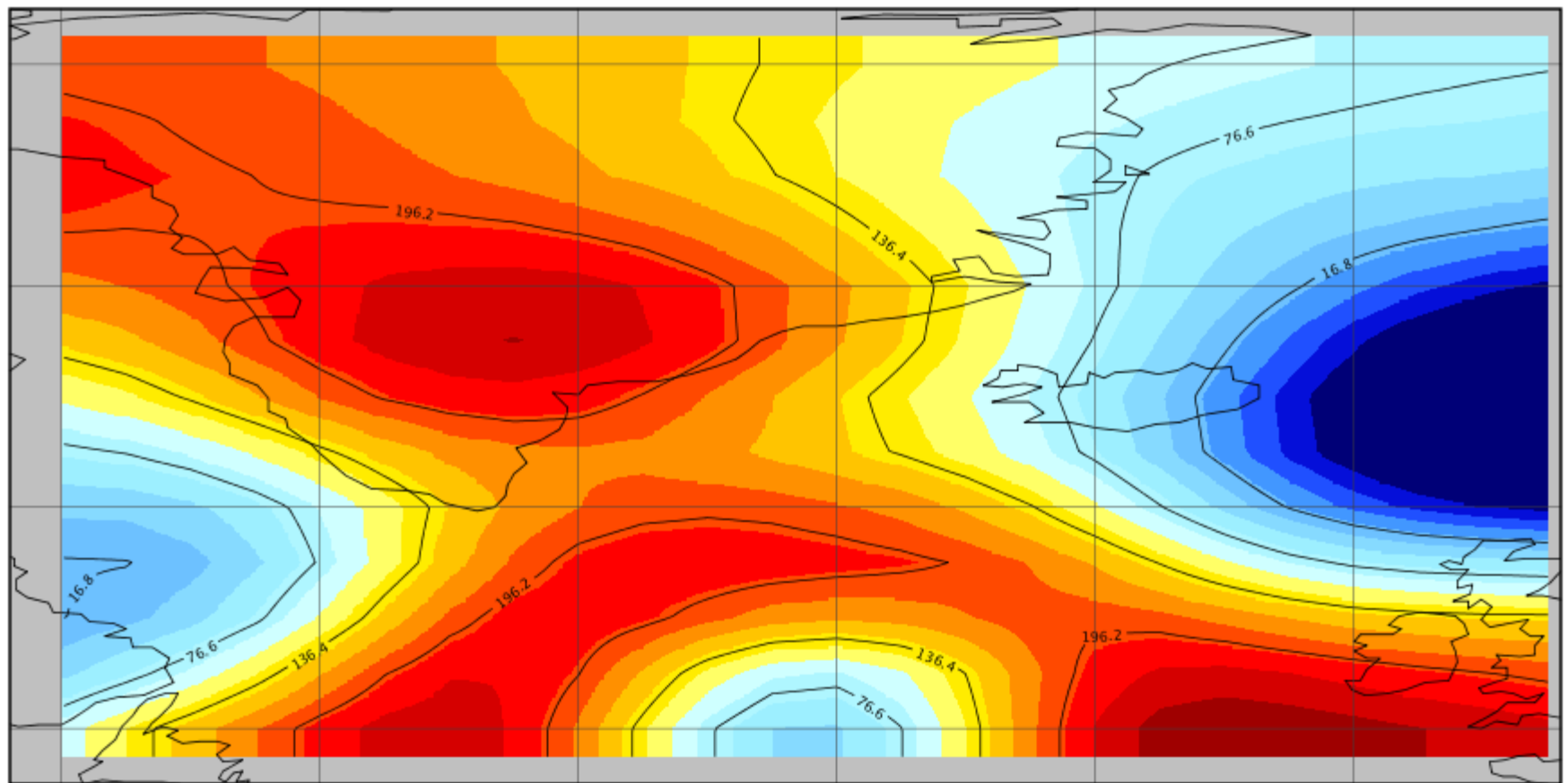


Hæð 1000hPa flatar kl. 18Z þann 23. maí



Data Min = -166.0, Max = 245.0

Hæð 1000hPa flatar kl. 06Z þann 24. maí



Data Min = -151.0, Max = 254.0

Þessi snúningur setti Evrópu í skotlínuna

- **Elgosið var hætt að framleiða ösku svo einhverju næmi**

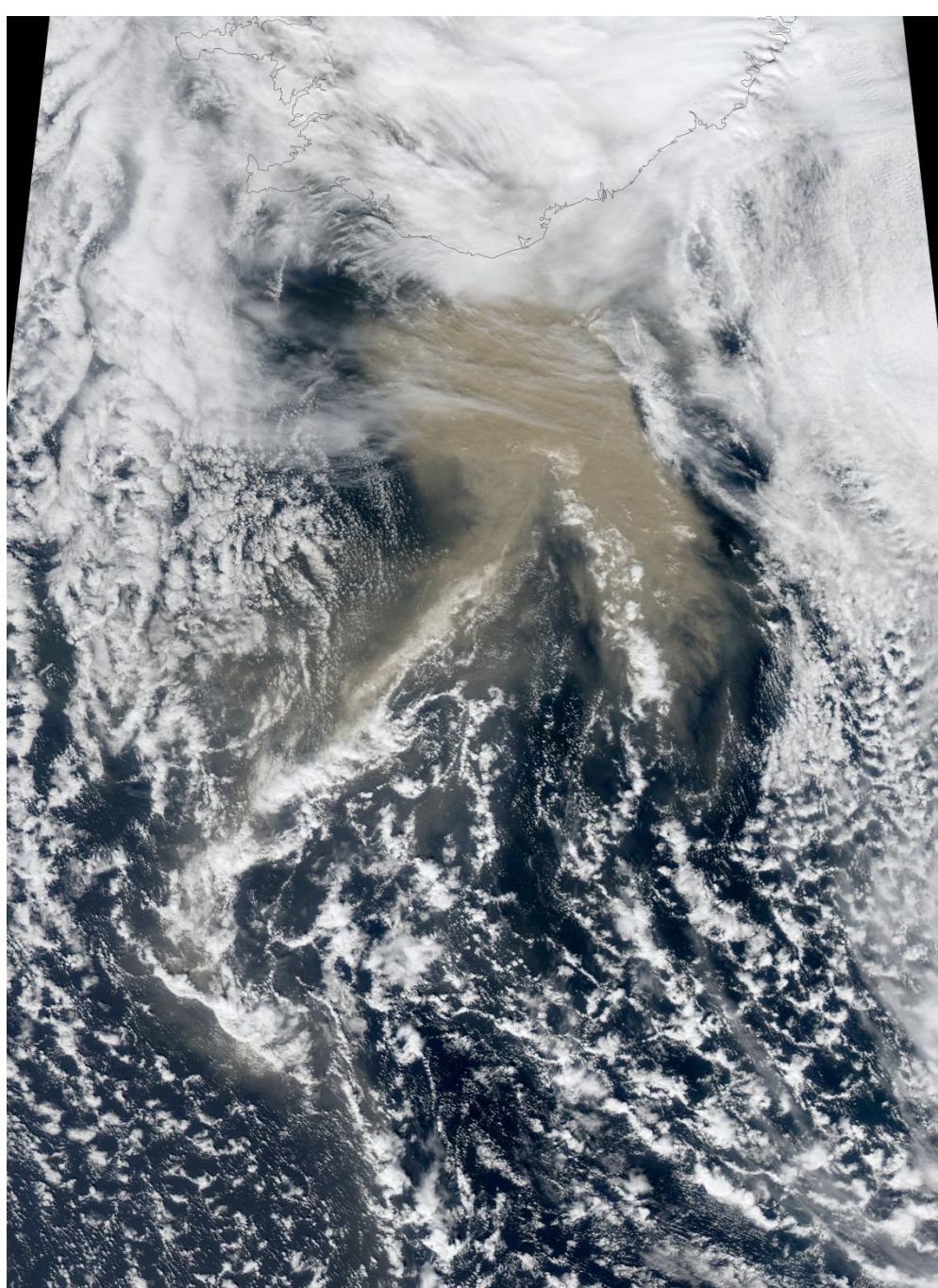
Mikil aska var bæði í veðrahvolfi og ofarlega í heiðhvolfi

- **NV átt miðaði henni allri til Evrópu**
 - **Bretland, Skandinavía, Danmörk, Þýskaland**

(Bolli Pálmason, VÍ)

Modis mynd (NASA) Mánudagur 23. kl 14Z

**Öskuský í neðri hluta
lofthjúpsins sunnan
við Ísland**





Met Office

Modelled Ash Concentration from FL000 to FL200 at 1200 UTC 24/05/2011

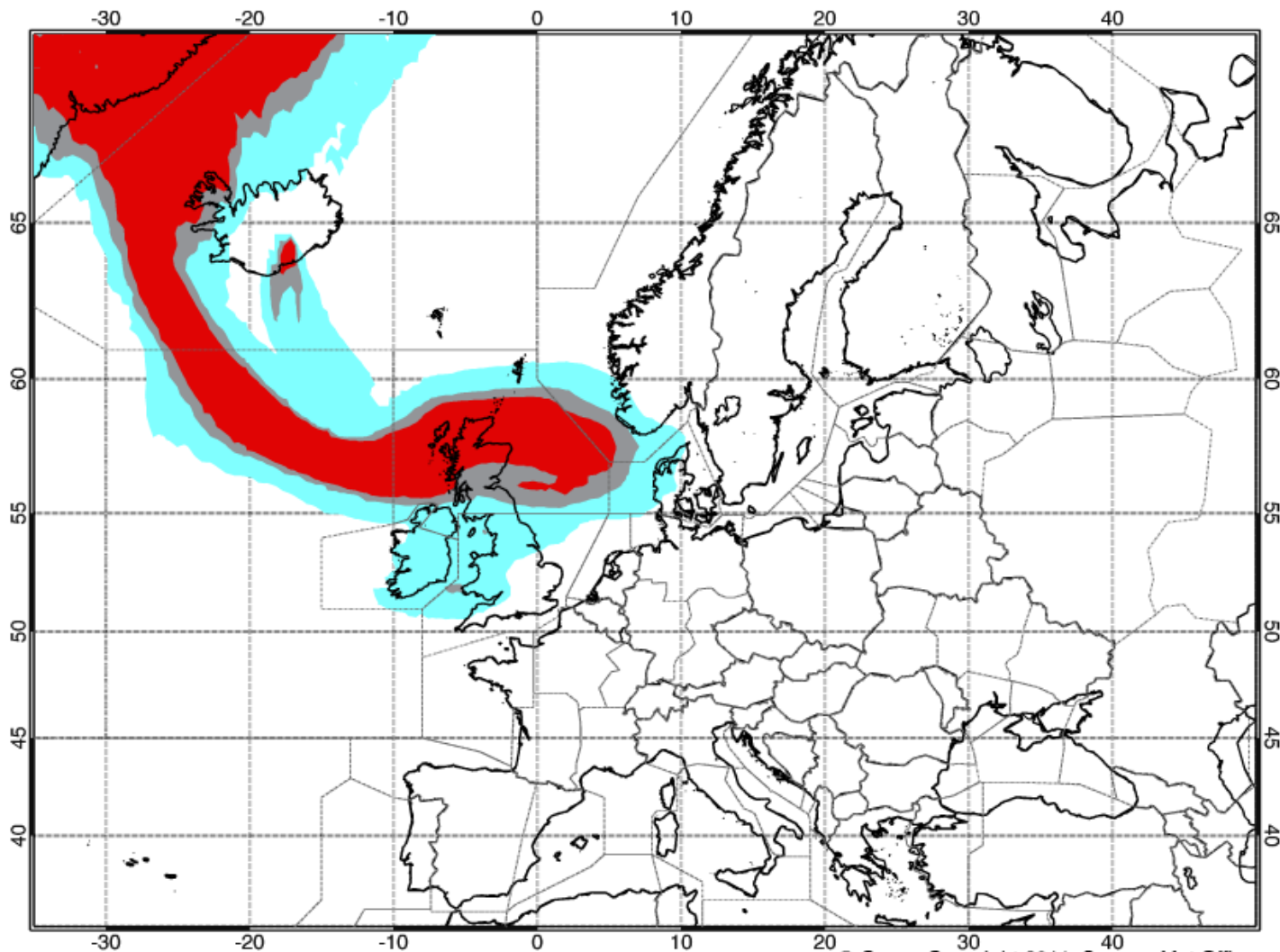
Issue time: 201105240600

This is a guidance product generated from model data and is supplemental to the official VAAC London Volcanic Ash Advisory and Volcanic Ash Graphic products. FIR boundaries are indicated for reference



200-2000 micrograms per cubic metre 2000-4000 micrograms per cubic metre >4000 micrograms per cubic metre

All concentrations are subject to a level of uncertainty relative to errors in the estimation of the eruption strength





Met Office

Modelled Ash Concentration from FL200 to FL350 at 1200 UTC 24/05/2011

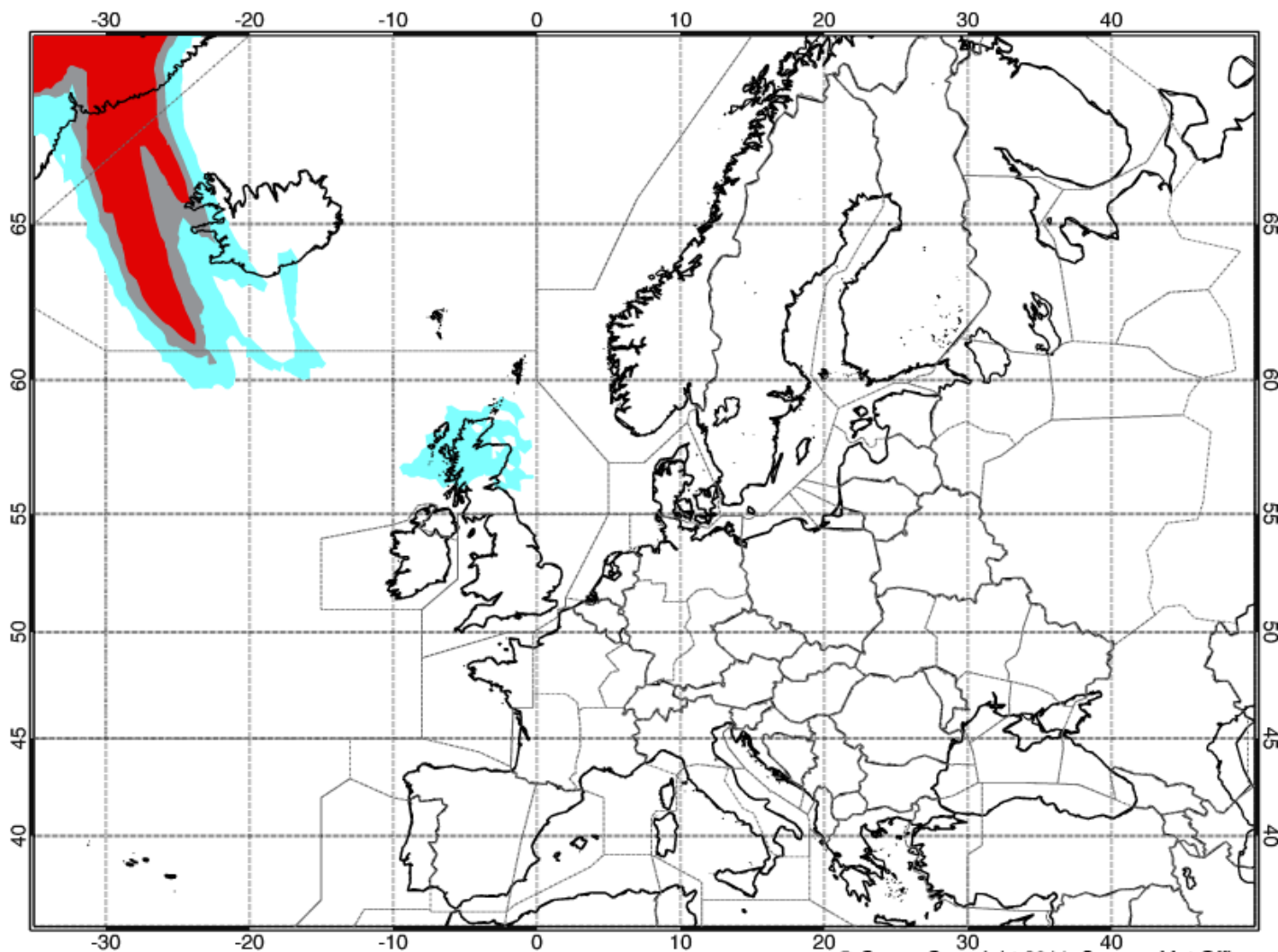
Issue time: 201105240600

This is a guidance product generated from model data and is supplemental to the official VAAC London Volcanic Ash Advisory and Volcanic Ash Graphic products. FIR boundaries are indicated for reference



200-2000 micrograms per cubic metre 2000-4000 micrograms per cubic metre >4000 micrograms per cubic metre

All concentrations are subject to a level of uncertainty relative to errors in the estimation of the eruption strength





Met Office

Modelled Ash Concentration from FL350 to FL550 at 1200 UTC 24/05/2011

Issue time: 201105240600

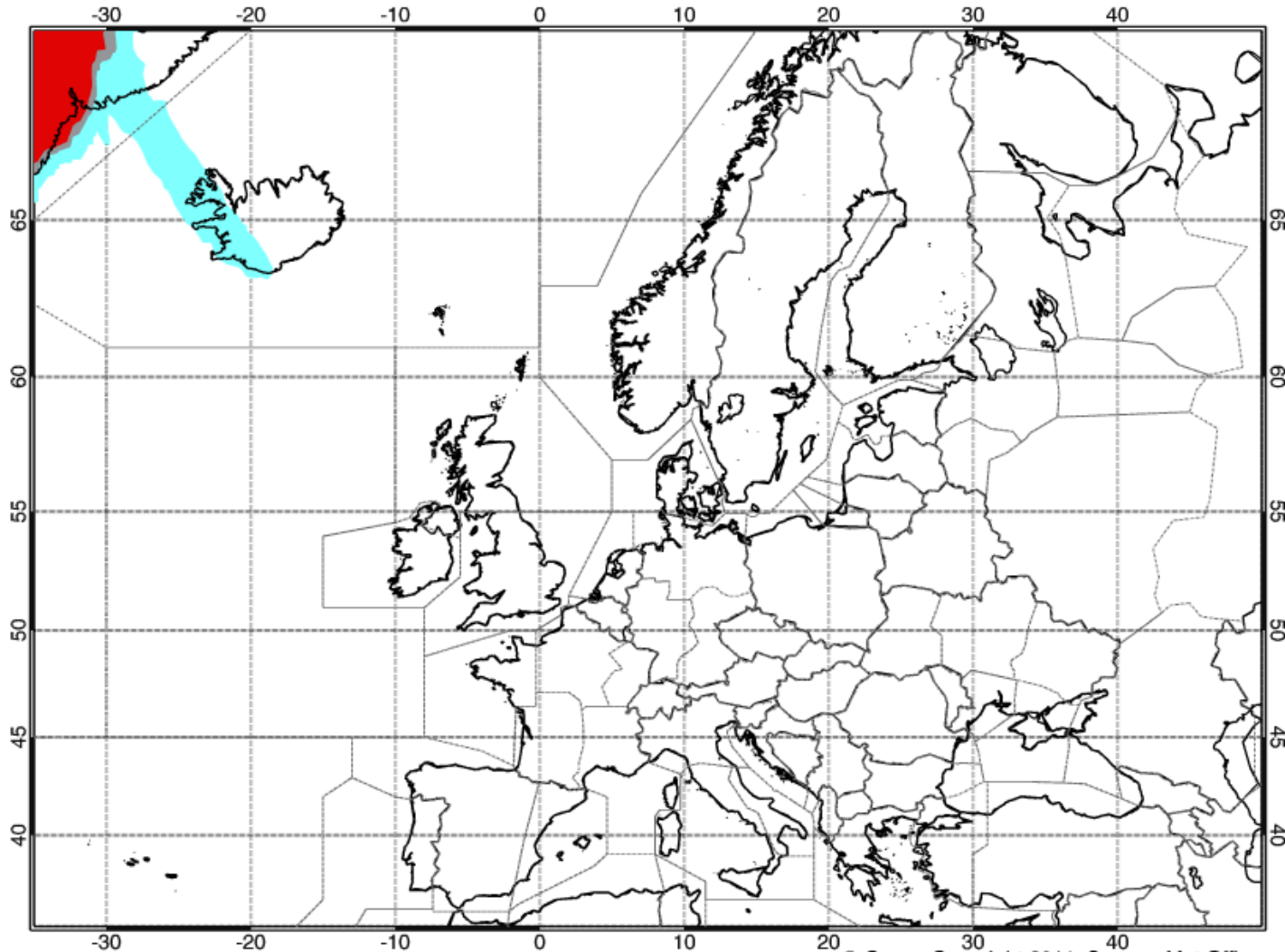
This is a guidance product generated from model data and is supplemental to the official VAAC London Volcanic Ash Advisory and Volcanic Ash Graphic products. FIR boundaries are indicated for reference

Icelandic Met
Office



200-2000 micrograms per cubic metre 2000-4000 micrograms per cubic metre >4000 micrograms per cubic metre

All concentrations are subject to a level of uncertainty relative to errors in the estimation of the eruption strength



Öskugreining
(BTD)
05:30 24 maí
NOAA -19



Íslenski Metið



Data courtesy of
NOAA-2007CUBS
Satellite: NOAA-19
Sensor:
AVHRR
Date: 2011/05/24 05:30
Start time: 05:30:00 UTC
End time: 05:37:00 UTC
Projection: NAD 83
Map projection:
3.1415926535
STEREOGRAPHIC
Latitude bounds:
49 N - 52 N
Longitude bounds:
70 W - 30 E



Öskugreining
(BTD)
13:45 24 maí
NOAA -19



Lokaorð

- **Grímsvatnagosið í maí 2011 var ákaft en stutt gos.**
 - Öskuframleiðsla var líklega meiri (mun?) en í Eyjafjallajökulsgosinu 2010
- **Vindar voru hagstæðir fyrir þétt flugsvæði í N-Evrópu.**
 - Ef gosið hefði átt sér stað 2 dögum síðar hefði niðurstaðan orðið önnur
- **Í kjölfar gossins kom lægð með tilheyrandi úrkomu upp að landinu og skolaði því versta**