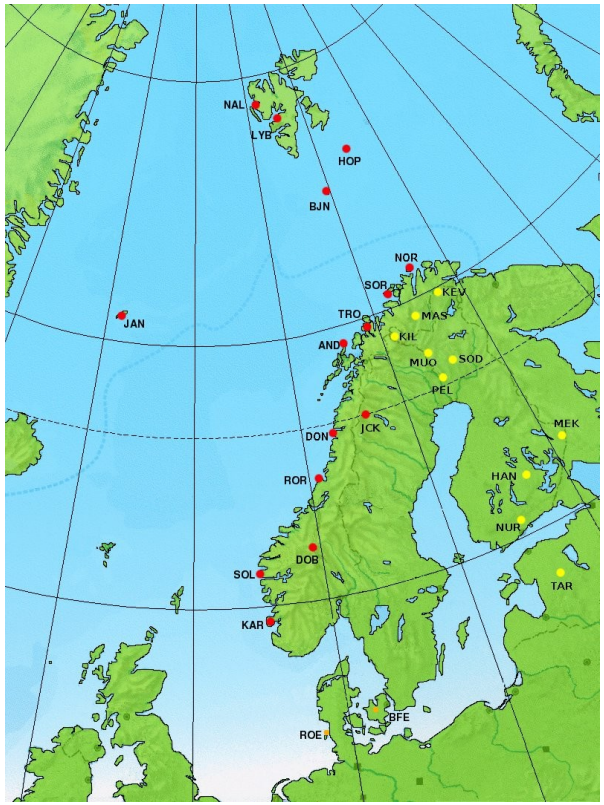
Tromsø Geophysical Observatory
Faculty of Science and Technology
University of Tromsø, Norway

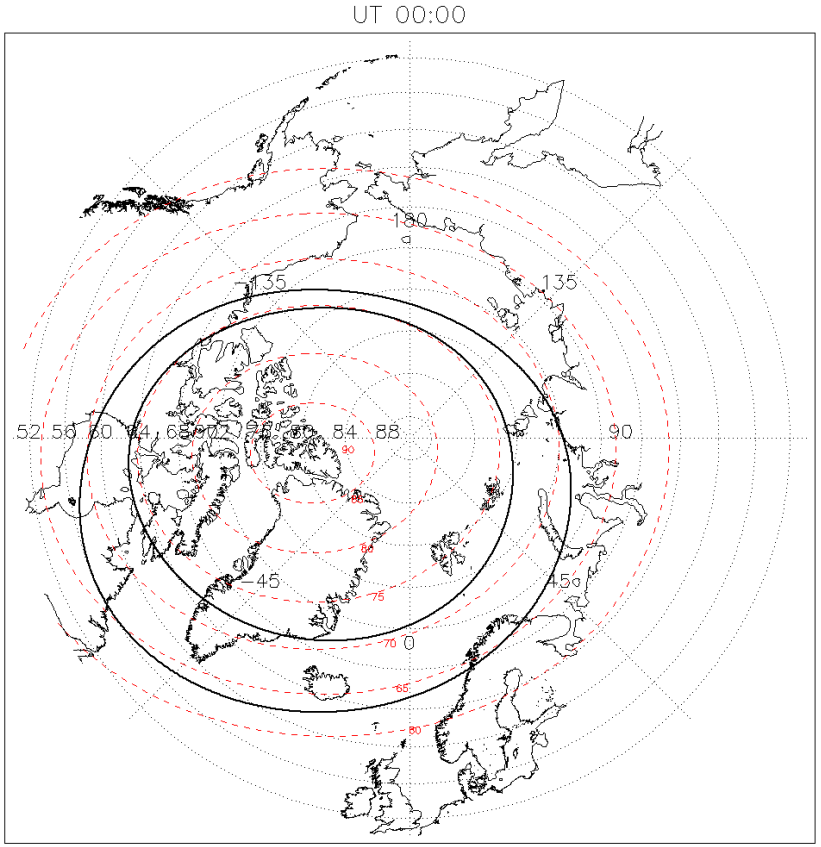
Real-time determination and monitoring of the auroral electrojet boundaries

Magnar Gullikstad Johnsen

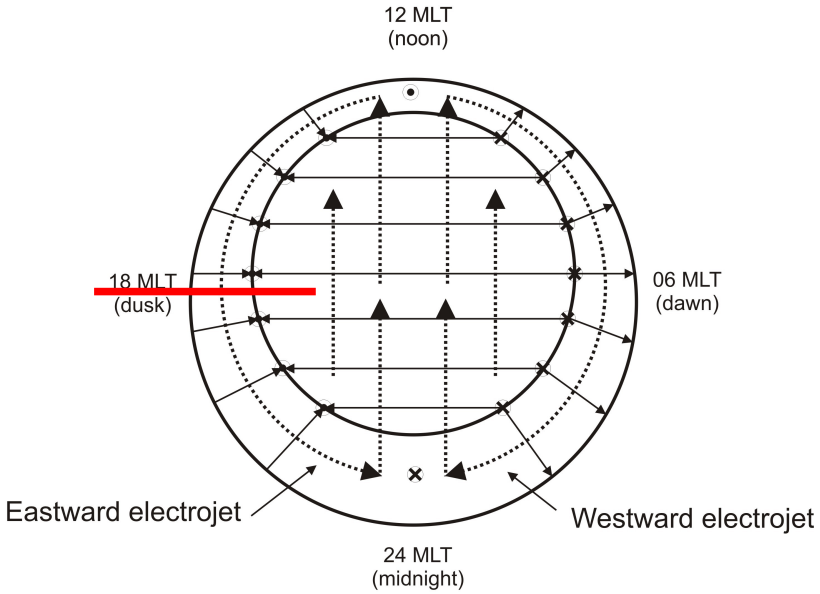
Background

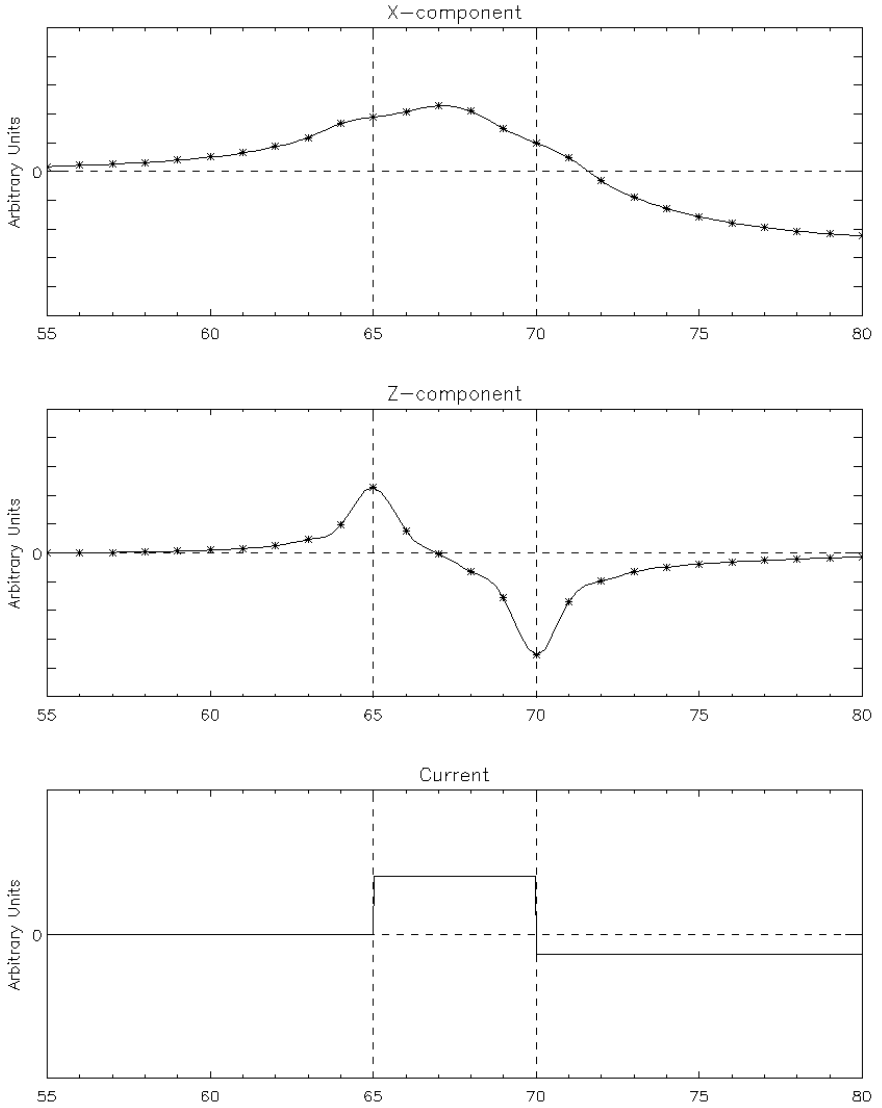
- Deliverable 4.3: Online provision of auroral alert and tracking system.





Method for obtaining the auroral electrojet

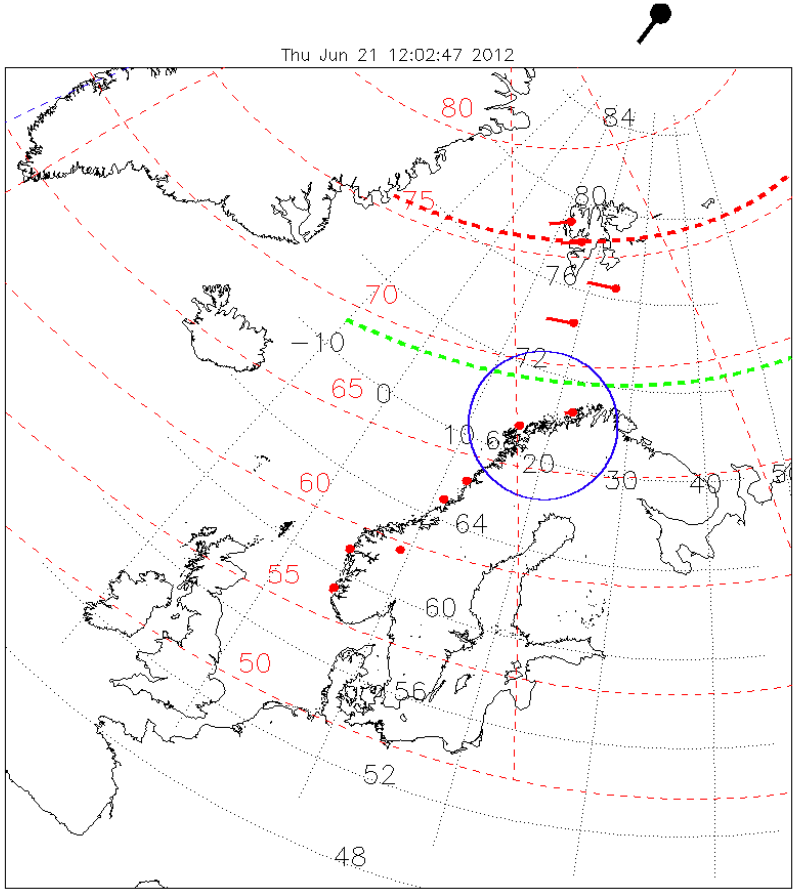


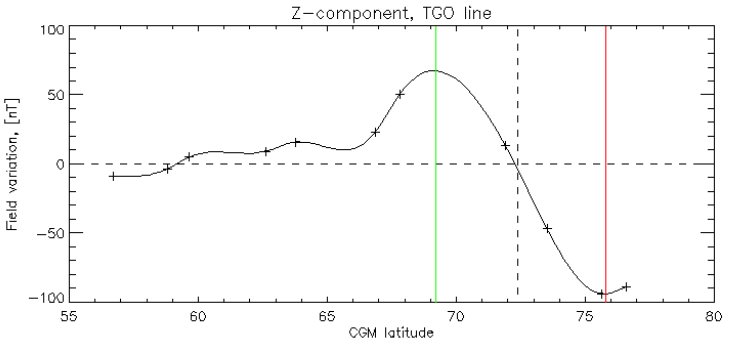


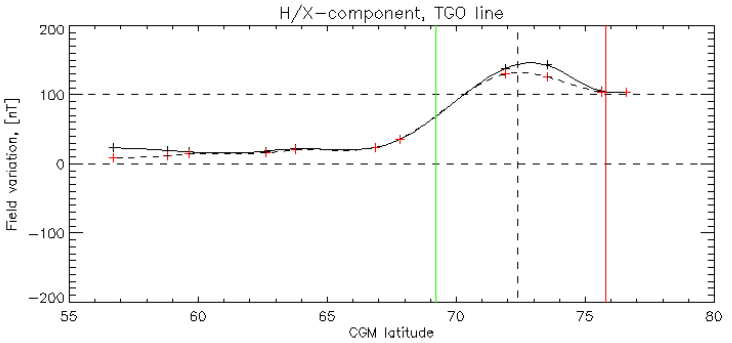
AFFECTS auroral (electrojet) tracker

- Method applied to near real-time data from the TGO magnetometer chain.
- The boundaries of the electrojet are determined when geomagnetic activity is higher than a threshold value.
- When Europe is in Cusp (noon) and Harang discontinuity (midnight) the tracker is turned off.
- Two graphical displays and one numerical part.

AFFECTS auroral (electrojet) tracker – Example (dusk)







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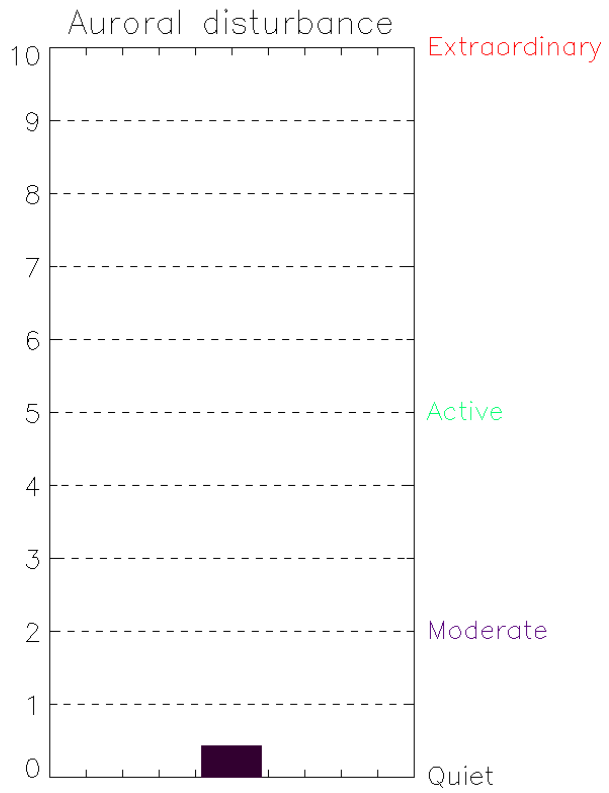
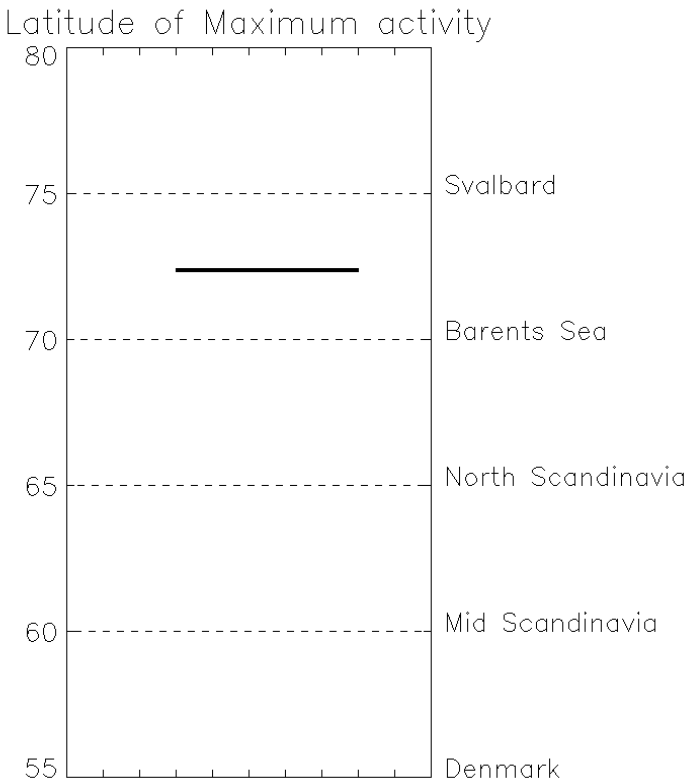
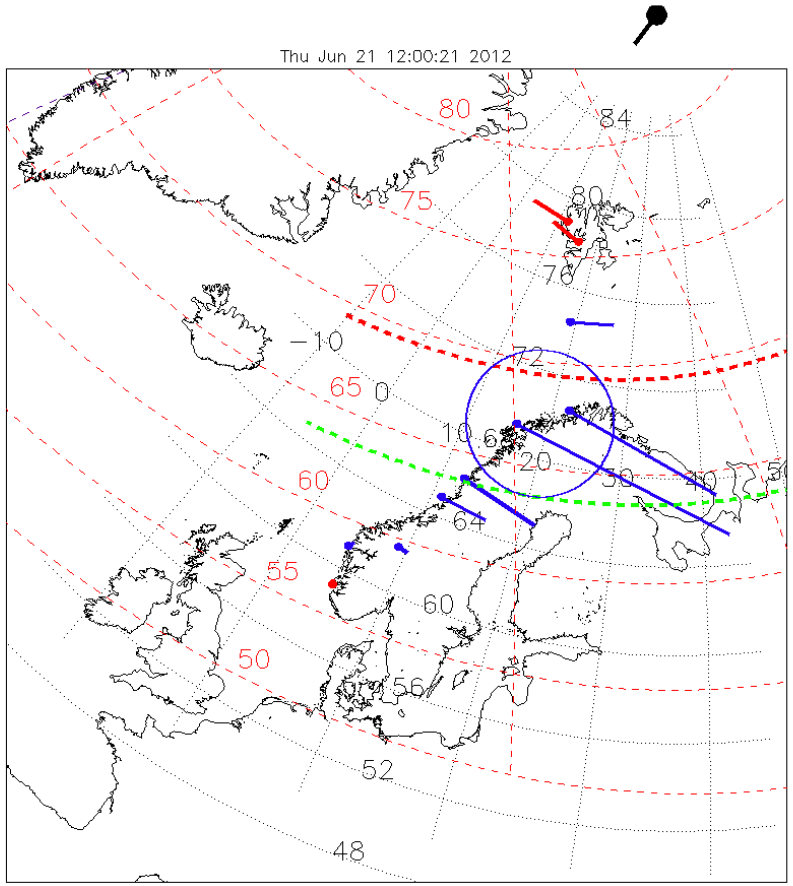
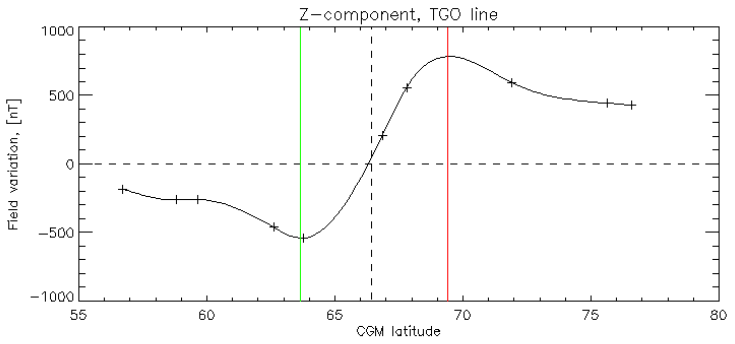
AFFECTS auroral (electrojet) tracker – Example (dusk)

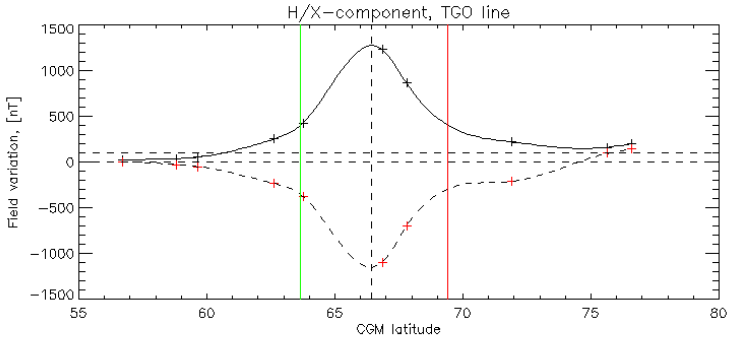




AFFECTS auroral (electrojet) tracker – Example (dawn)







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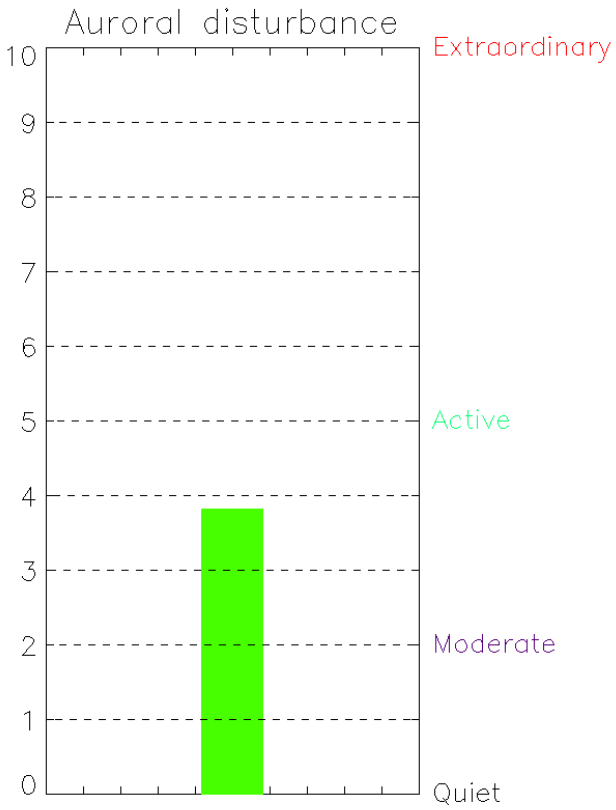
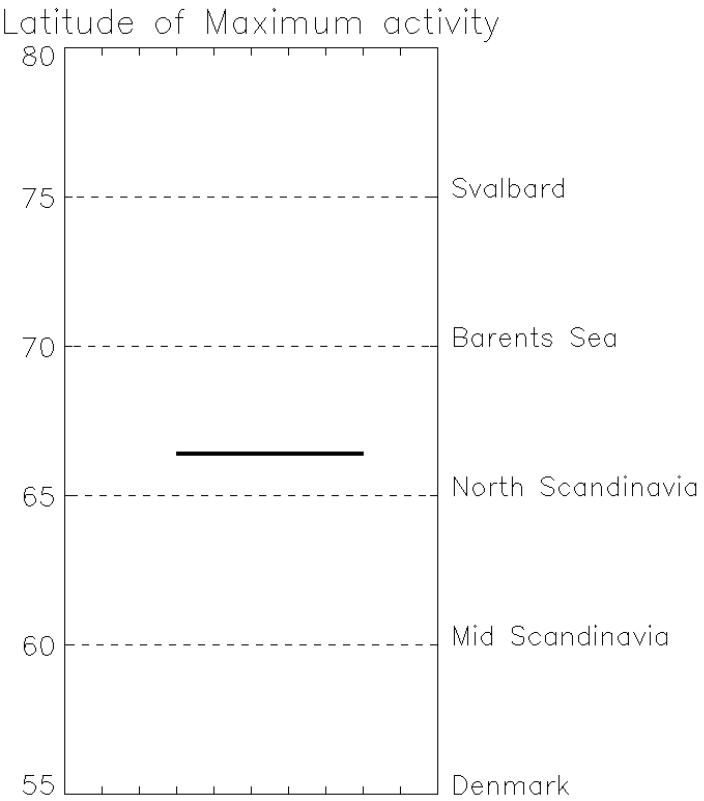
AFFECTS auroral (electrojet) tracker – Example (dawn)





AFFECTS auroral (electrojet) tracker

- Graphic displays with explanation:
  http://fox.phys.uit.no/AFFECTS/
- Numerical part:
  http://fox.phys.uit.no/AFFECTS/RT_oval_location.dat

Acknowledgements

The research leading to some of these results has received funding from the European Commission's Seventh Framework Programme (FP7/2007-2013) under the grant agreement no 263506 (AFFECTS).

Thank you!

- Questions?

Photo: Njaal Gulbrandsen