

MIRACLE rules of road

The Magnetometers - Ionospheric Radars- Allsky Cameras Large Experiment (MIRACLE) is a two-dimensional instrument network constructed for mesoscale studies of auroral electrodynamics. The network consists of the IMAGE magnetometer network, bi-static VHF radar STARE (operational during 1998-2005) and a set of digital all-sky cameras. The network is maintained and operated in collaboration with several institutes *). The Finnish Meteorological Institute maintains the networking between the various instruments and provides access to the merged data sets.

MIRACLE data and data products distributed in the MIRACLE web-pages (<http://space.fmi.fi>) are freely available for non-commercial scientific use and for teaching purposes. However, data users are encouraged to discuss the data with knowledgeable scientists within the MIRACLE Team **), in order to avoid misinterpretation and to achieve high quality plots for printing purposes. Data users are not entitled to distribute data to third parties outside their own research teams without informing the Team. In the cases of massive usage of full-resolution data the Team should be contacted for negotiations about the necessary arrangements for fluent access to the data archives. In the case of substantial consultation we expect you to include the appropriate Team member your author list when publishing the results. Otherwise acknowledgements and references to some introductory articles (c.f. below) are enough. The Team wishes to obtain the reference information of all the articles publishing MIRACLE data.

***)Institutes maintaining MIRACLE:**

Sodankylä Geophysical Observatory/University of Oulu (Finland)

GeoForschungsZentrum Potsdam (Germany)

Technical University of Braunschweig (Germany)

University of Tromsø (Norway)

Institute of Geophysics of the Polish Academy of Sciences,

Polar Geophysical Institute in Russia,

Swedish Institute of Space Physics

Geological Survey of Sweden

The University Courses on Svalbard (University of Tromsø, Norway)

Interplanetary Space Physics Institute, Italy (IFSI – INAF)

EMHI/Tartu University (Estonia)

Max Planck Institute for Aeronomie (Nowadays Max Planck Institute for Solar System Research, Germany)

****MIRACLE Team:**

Olaf Amm (Data products)

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Sample acknowledgments

MIRACLE:

"The MIRACLE network is operated as an international collaboration under the leadership of the Finnish Meteorological Institute. The IMAGE magnetometer data are collected as a joint European collaboration. IFSI-INAF (Italy) and the University of Oulu (Finland) maintain the ITACA ASCs and the ASC in Sodankylä. The STARE radar has been operated in collaboration between the Finnish Meteorological Institute and Max Planck Institute for Aeronomy (Nowadays Max Planck Institute for Solar System Research, Germany)"

IMAGE:

"The IMAGE magnetometer data are collected as a joint European collaboration". Please mention also the PI institute: either the Technical University of Braunschweig (data before 1996) or the Finnish Meteorological Institute (data since 1996).

References

A paper introducing all the MIRACLE instruments:

M.T. Syrjäsoo, T.I. Pulkkinen, P. Janhunen, A. Viljanen, R.J. Pellinen, K. Kauristie, H.J. Opgenoorth, S. Wallman, P. Eglitis, P. Karlsson, O. Amm, E.Nielsen, and C.Thomas, Observations of substorm electrodynamics using the MIRACLE network, in *in Substorms-4*, edited by S. Kokubun and Y. Kamide, Terra Scientific Publishing Company, Tokyo, 111-114, 1998.

Papers describing the IMAGE magnetometer network:

Lühr, H., A. Aylward, S.C. Buchert, A. Pajunpää, K. Pajunpää, T. Holmboe and S.M. Zalewski, 1998: Westward moving dynamic substorm features observed with the IMAGE magnetometer network and other ground-based instruments. *Annales Geophysicae*, **16**, 425-440.

or

Viljanen, A. and L. Häkkinen, 1997: IMAGE magnetometer network. In: Satellite-Ground Based Coordination Sourcebook (eds. M. Lockwood, M.N. Wild and H.J. Opgenoorth). ESA publications SP-1198, p. 111-117.