Gerard Kilroy
Meteorology Insitute,
Faculty of Physics,
Theresienstr. 37,
LMU Munich,
Germany.

Rupert Ford Award Report

First, I would like to offer my sincerest gratitude to the RmetS, and to the people involved in the Rupert Ford fund for giving me the unique opportunity to work in Darwin, Australia. Working in the forecast office at the Australian Bureau benefited me immensely, as I discovered how forecasters have to deal with difficult situations, often where the models are offering conflicting forecasts. I attended the daily chart discussions and experienced how difficult the forecasters job is.

We were incredibly lucky to experience the development of a tropical depression just off the coast of Darwin, which was a real pain to forecasters due to its close proximity to land. While the ECMWF model forecasted the system moving over land and decaying, the Access-G model had the system staying over the ocean and developing. This caused a real headache for the forecasters who had to make a decision on whether or not to issue a tropical cyclone warning.

The system eventually did move over land around the 14th of January, passing through Darwin as the ECMWF model had predicted, although surprisingly it then developed further over land as it moved south. This system was the topic of an interesting discussion on the tropical storm mailing lists, where some of the worlds leading tropical cyclone experts got involved.

In my application I mentioned that the structure of lows that develop over land were a prime area of interest to me. This system provided a perfect opportunity for a study. During the trip I obtained the ECMWF analysis for the system on a daily basis, and plotted up some of the dynamical fields. It was decided that this system was suitable to write a paper on, and a perfect opportunity to involve the local forecasters. We hope to have a close collaboration over the coming months, and I have already received satellite data from the Bureau since I returned. On the next pages I provide an image of the early title page of a paper I hope to submit to the QJ in the near future, along with a satellite image of the system in question on the 15th January, 2014 and the systems track, which was compiled with the ECMWF analysis data I acquired.

This trip has been a huge success, as the foundation for a long term collaboration with the Darwin forecasters has been laid, and an ideal test case presented itself within a few days of my arrival. Without the Rupert Ford award none of this would have been possible.

Yours gratefully,

Gerard Kilroy

A case study of the Northern Territory tropical depression (January 11 - 23rd) that formed in the monsoon trough from the ECMWF analyses

Gerard Kilroy[a]*, Roger K. Smith[a], M. T. Montgomery[b], Todd Smith[c], Billy Lynch[c] and Emile Jansons[c]

[a] *Meteorological Institute, Ludwig-Maximilians University of Munich, Munich, Germany*
[b] *Dept. of Meteorology, Naval Postgraduate School, Monterey, CA*
[c] *Bureau of Meteorology, Darwin, Australia*
*Correspondence to: Dr. Gerard Kilroy, Meteorological Institute, Ludwig-Maximilians University of Munich, Theresienstr. 37, 80333 Munich, Germany. E-mail: gerard.kilroy@lmu.de

We present a case study of a tropical depression that developed near land in northern Australia, and then subsequently intensified over land, based on European Centre for Medium Range Weather Forecast (ECMWF) analyses.

Key Words: Tropical depressions; tropical lows, tropical cyclogenesis

An early snapshot of a paper we hope to submit to the QJ in the future.

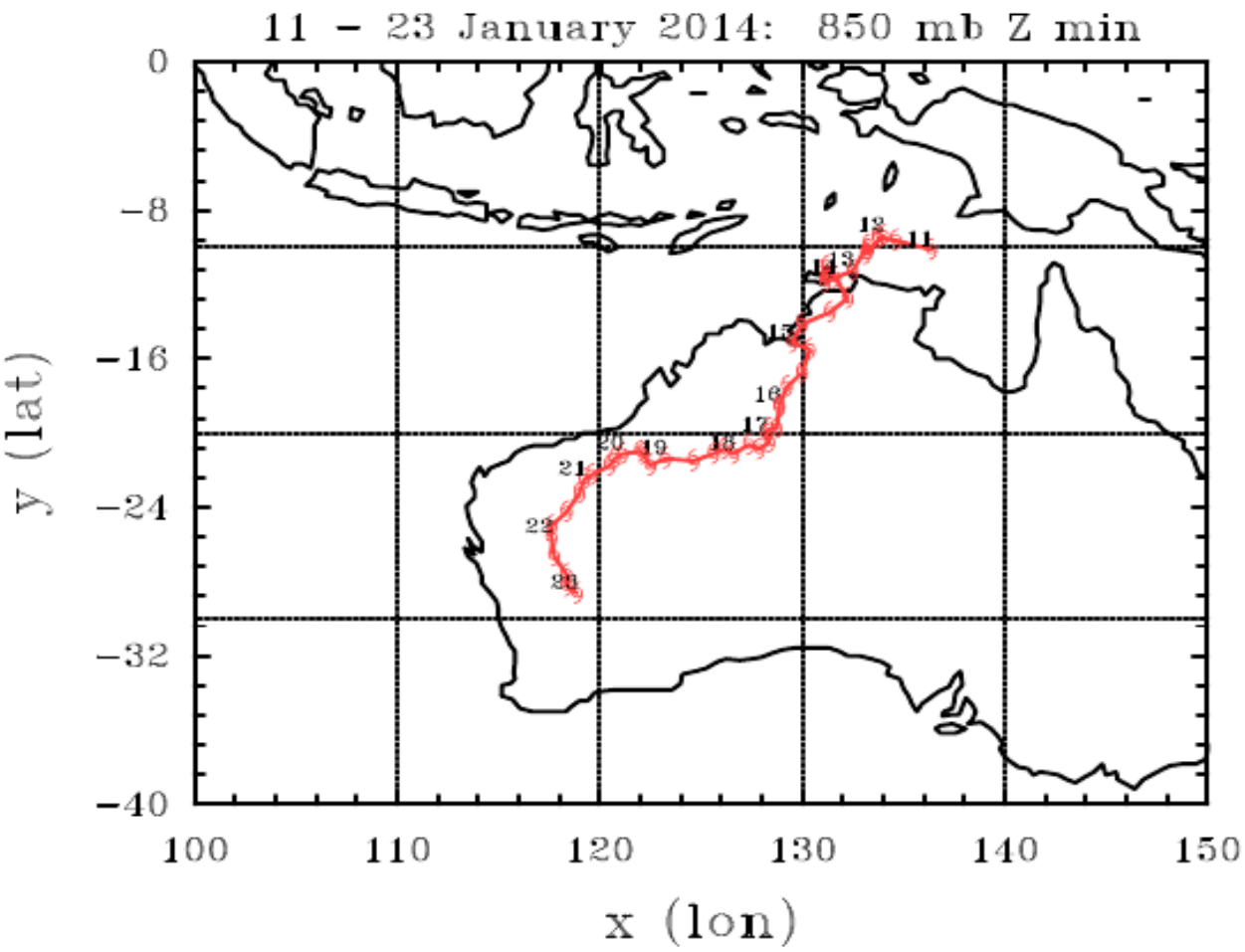

Figure 1: The system track as determined by the 850 mb geopotential minimum.

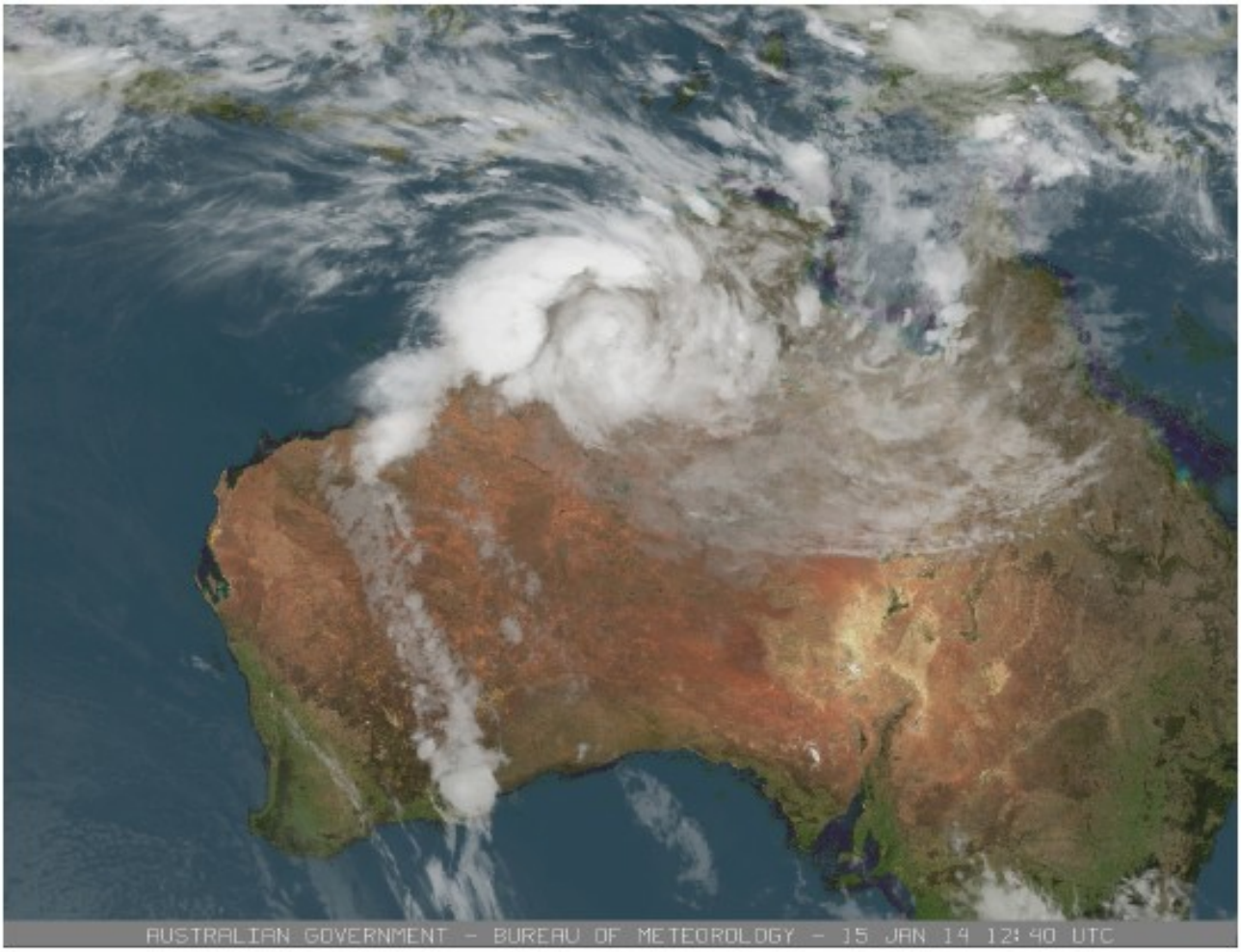

Figure 2. Satellite image on the 15th of January, 2014 at 12:40 UTC.