

Tropical Warm Pool International Cloud Experiment

The Territory Times obtained quotes from some of the leading scientists about their experiences working on the project.

Jim Mather, lead scientist for TWP-ICE, representing the ARM Program:
News on surface flux sites and ship



Jim:

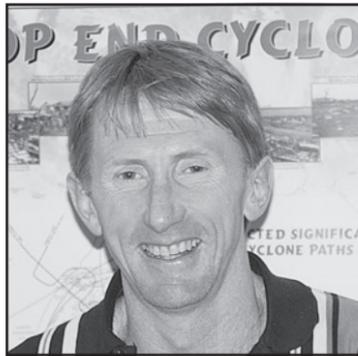
For about 10 days near the start of the experiment, we had very high winds, about 30-40 knots, which resulted in high seas and 2-3 meter swells with white caps. As you can imagine, this resulted in very unsteady conditions on the ship. In particular, this made weather balloon launching very challenging. Occasionally the balloons would hit the ship as it tossed about, or they would get caught in the downdraft and take a dive into the sea. When they did get into the air, we received very good data. Also, the rough seas made it pretty tough to align some of the sensitive optical instrumentation. Despite these challenges we've been getting good data, and even better in the last week as winds have dropped off.

We've also completed several missions for surface fluxes comparisons between aircraft and ship. The Dimona pilot flew at an average altitude of 20 meters from Darwin to ship and back. Seeing someone else (the Dimona pilot) involved in the experiment was a significant morale boost to people on the ship.

Overall, instruments on all platforms (aircraft, ground, ship) have performed very well. We've had no major system failures, which in a campaign like this, is somewhat surprising due to long transport distances and harsh conditions. Overall, we've obtained amazing measurements. Although we've had a number of minor technical challenges of various kinds, we've managed to work through these and we're really excited about the data sets we've obtained.

Peter May, lead scientist for TWP-ICE, representing BoM:

Summary of experiment status



Peter:

Our students out on the islands and on the ship are having a bit of adventure. I'm glad I wasn't on the ship! They dealt with really difficult conditions for a fairly lengthy period of time, but still launched the balloons every three hours...

The challenge of getting 3-5 aircraft flying coordinated mission has been pretty interesting; it's taken extraordinary team work... We'll continue to look for opportunities for multi aircraft missions to sample anvil thunderstorms during these break conditions. This is quite different characteristics from the beginning of the experiment, so it will be extremely valuable to see what needs to go into the computer models in term of variability.

When you think about the instrumentation capabilities on the aircraft, is pretty fascinating. They're getting images of ice crystals, mere micrometers in size, while flying at 400km/hr; it's an amazing technical achieve-

ment. That's another reason why this experiment is possible; new technology allows us to look at this stuff in extraordinarily fine detail. Plus, here was have radar, long-term climatology and surface flux measurement, and (radiosonde) soundings to support interpretation of data and give us extremely detailed structure of these cloud systems. We will have a very valuable and complete data set from this experiment.

It's been a long haul and we're looking forward to the finish line. We're already talking about meetings to discuss data analyses and results in about 6 months or so, after people have had a chance to produce their data products.

Christian Jakob, BoM:



Christian:

This is the biggest experiment to ever take place on Australian soil. We're 2 and a half weeks into it with five days to go, 5 days to go, and so far it has been extremely successful.

We have students and retired BoM observers running the radiosonde (weather balloon) sites at five locations around Darwin. They are working in day and night shifts 24/7 to launch the sondes every three

hours. We've had some technical issues as one would expect in an experiment of this size, but those have been worked through and the soundings have been very successful. Data from the weather balloons allows us to put aircraft results into context; and together with all other data, will be very useful to improve models for weather prediction of climate simulations. For instance, data gathered when storm went through at the beginning of the experiment, and then from the storm sitting over the southern Top End for a week, will greatly help us understand tropical cyclones.

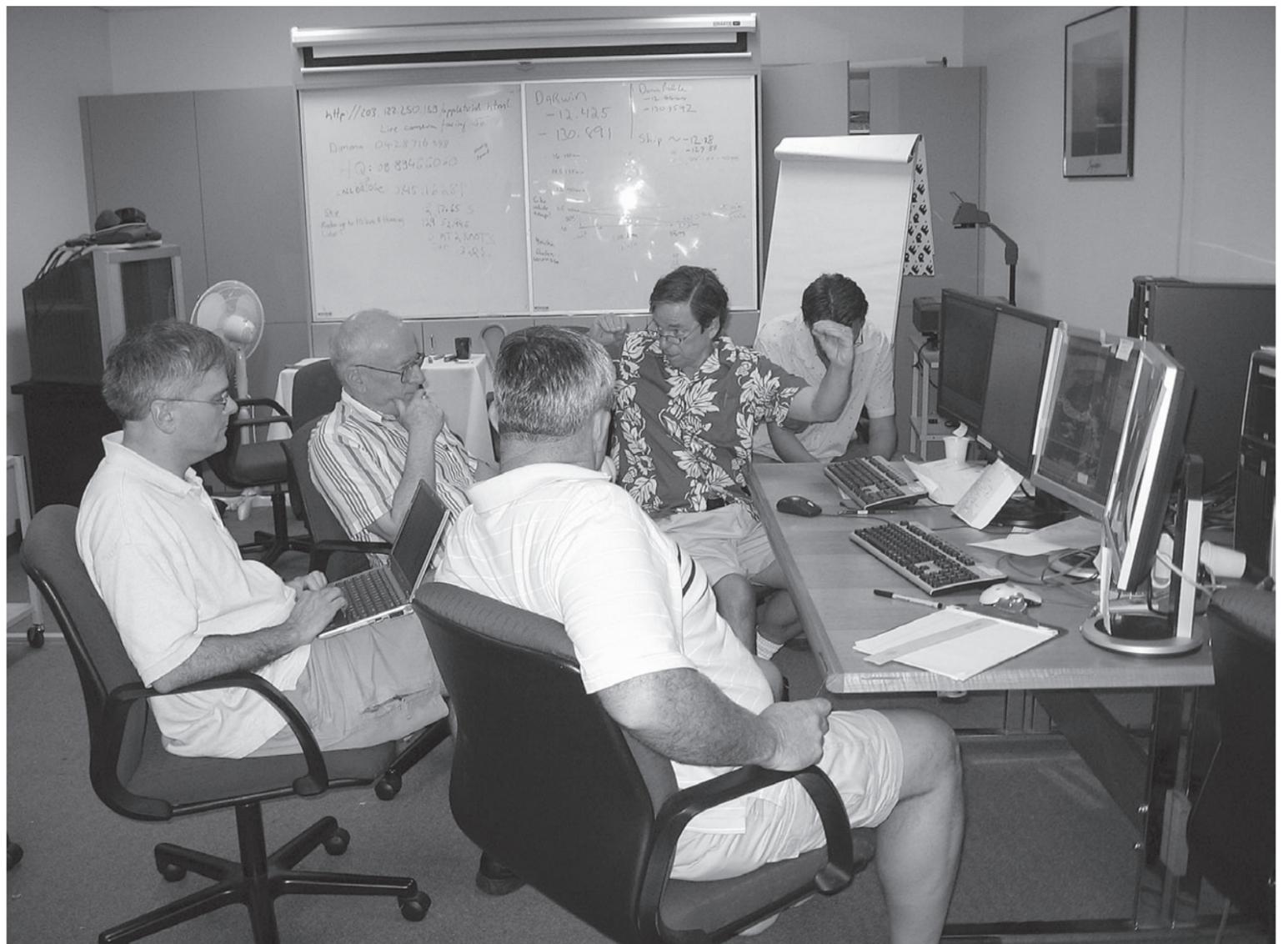


Another day at the TWPICE marine office

I've visited all the sites and shown the sonde data in relation to everything else. Everyone was very excited to see how their efforts are contributing to the experiment. Spirits remain high and they are committed to what they're doing; I think we owe special thanks to retirees at the sonde sites who are keep things running smoothly, both technically and on a personal level.



CROWDS GATHER AT THE LOCAL FIELD DAY



SCIENTISTS DISCUSS RESULTS FROM PROJECT