



Welcome to TWP-ICE Workshop:

Tropical Warm Pool - International
Cloud Experiment, Darwin, Australia

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Thanks to Jim Mather, Peter May, and Christian Jakob for a great intelligently-designed experiment!

Data to study:

links between storm intensity and cirrus

how cirrus "evolves"

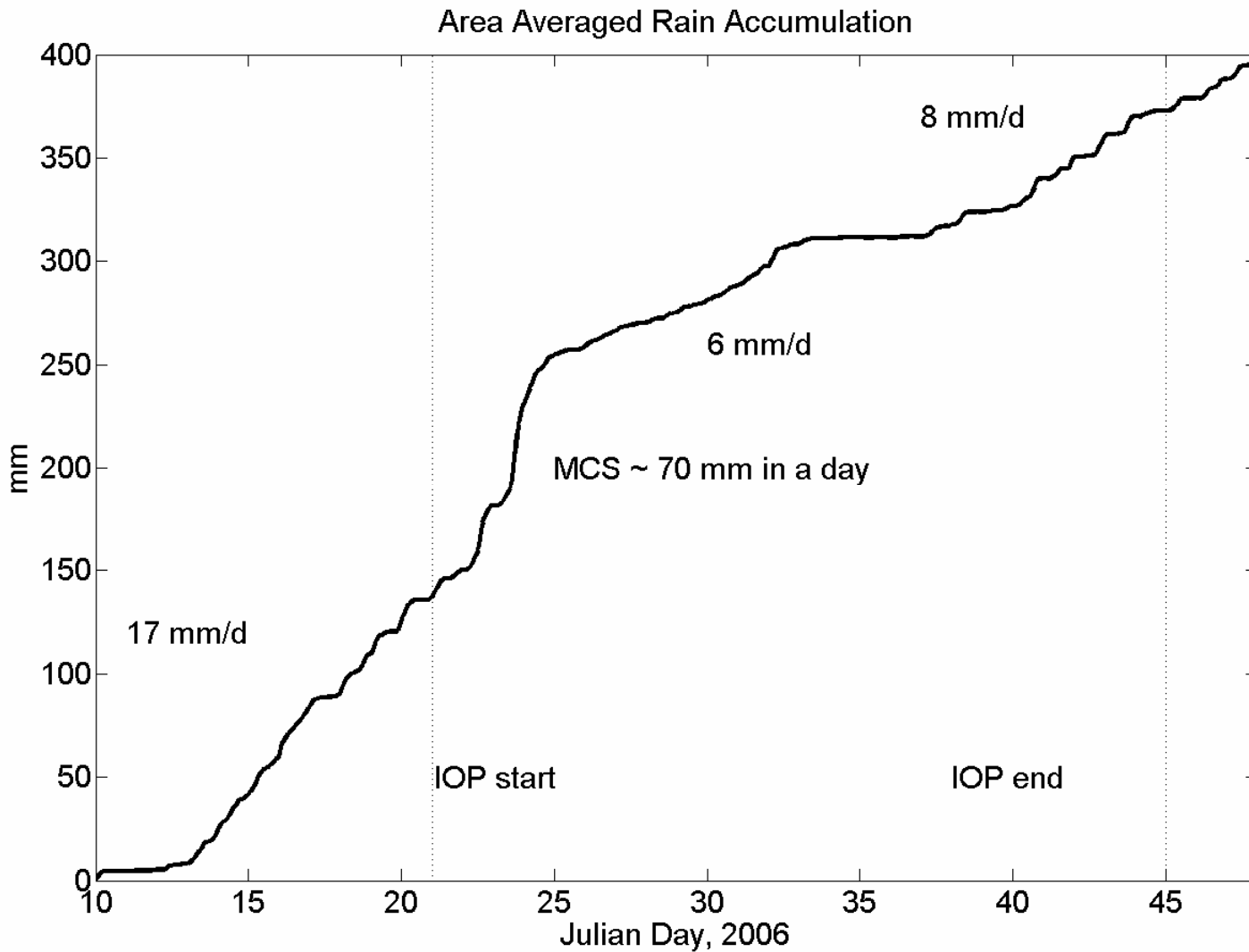
environmental control

boundary layer structure and evolution

unexpected: surface fluxes over tropical ocean at high wind speeds!



TWP-ICE sampled several regimes





There are few tropical datasets, and even fewer in the S. Hemisphere

TWP-ICE is an unprecedented data set for model forcing, testing and evaluation

One question that has mystified the cloud radiation community: why are tropical clouds almost radiation-neutral?



From the archives: New Direction for TWP (Ackerman, 2001 ARM Science Team Meeting)

Contracting Nauru and PNG site maintenance to the Australian Bureau of Meteorology.

Benefits:

- Improved response time, decreased travel costs
- Installation of 3rd ARCS at Darwin will provide an operational training facility and a new data stream
- New research partners in BOM and CSIRO.
Principal BOM contact is Peter May



The Darwin site got off to a rocky start,
esp. after we saw this item...

From a Dec 2005 presentation to ARM STEC:

Millimeter Cloud Radar (MMCR)

Spare TWTA, CUDC — no more cannibalism at Darwin!



After seeing the grand opening ceremony for ARM's Darwin site, we weren't so sure we had put cannibalism behind us...



ARM Representatives at Darwin site opening ceremonies



A worry: ARM Darwin site is on edge of complicated land-sea environment





But the Darwin site has become the jewel
in ARM's tropical crown, and TWP-ICE
makes it even better

In celebration of TWP-ICE,
selected photos from my trip
there (17-27 Jan 2006)



I was intimidated on Opening Day...





TWP-ICE platforms



Dornier



ARM site, Darwin



BOM and ARM far-flung assets





The key to TWP-ICE success: the dedication of the Mt. Bundy sonde launchers





Sarah holds
 the famous
 Mt. Bundy
 good-luck
 rubber
 chicken



Chuck Long celebrates monsoon break!





TWP-ICE — Experiment HQ





I could really use that WD-40...





Sarah concentrates on Christian's every word while Dave Starr zones out





If I can't wear my Hawaiian shirts in Darwin, where can I wear them?





There was really a lot of commuting...





The last time Connor was happy, before the ship headed into typhoon waves...





No, no, it really is an airplane...





Officially, this is NOT a toy...



Desdemona



The Egrett, liberated from a WWII fighter plane museum...





Greg McF hits head on cloud probe, then his Walkman falls off...





I got a chance to see some local wildlife...





TWP-ICE helped change ARM

- Moved scanning radar up to highest priority
- Totally revamped former ARM-UAV Program



The Proteus flights in TWP-ICE were the end of ARM's "UAV" program





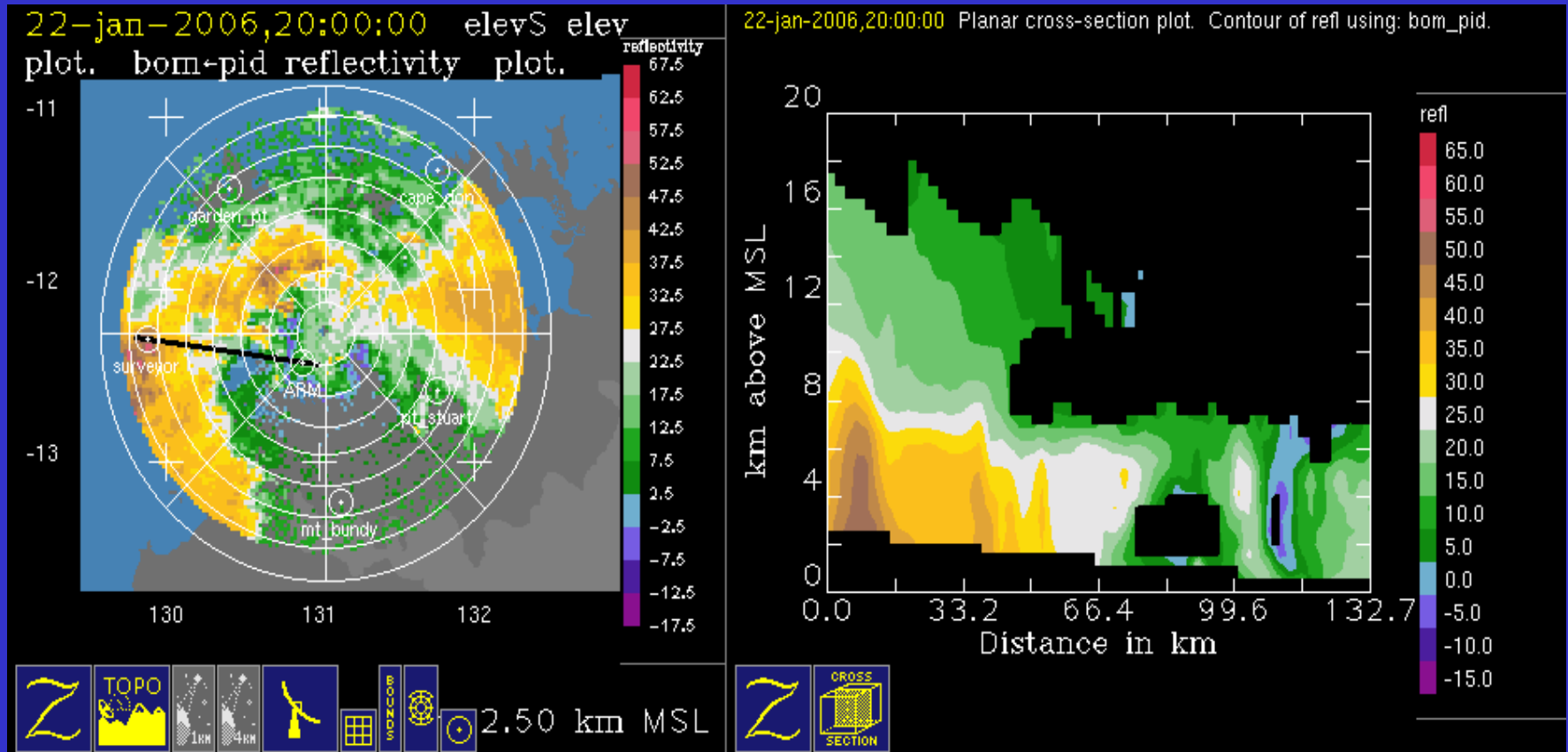
For clouds, 1D and 2D probing as ARM does now is dimensionally challenged



Copyright: NASA. STS 41-B, February 1984. Picture #11-41-2347



C-Pol radar provided continual context in TWP-ICE: an exemplar for our other sites



(from Courtney Schumacher)



ARM's Near Future

2nd Mobile Facility (marine)

New volume-scanning radar(s) specifically designed to test 3D radiation and cloud-resolving models

Routine cloud research flights

More emphasis on precip



We need to look at ALL the drop sizes

