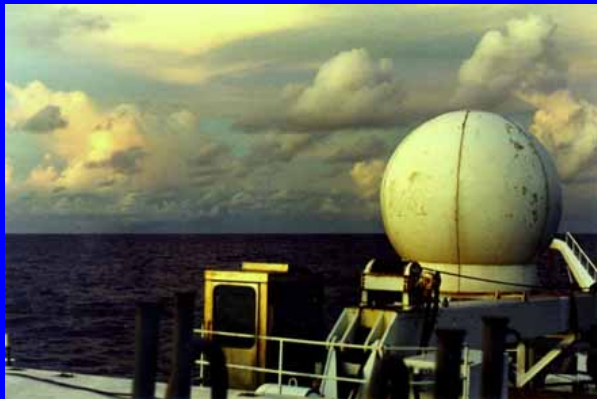
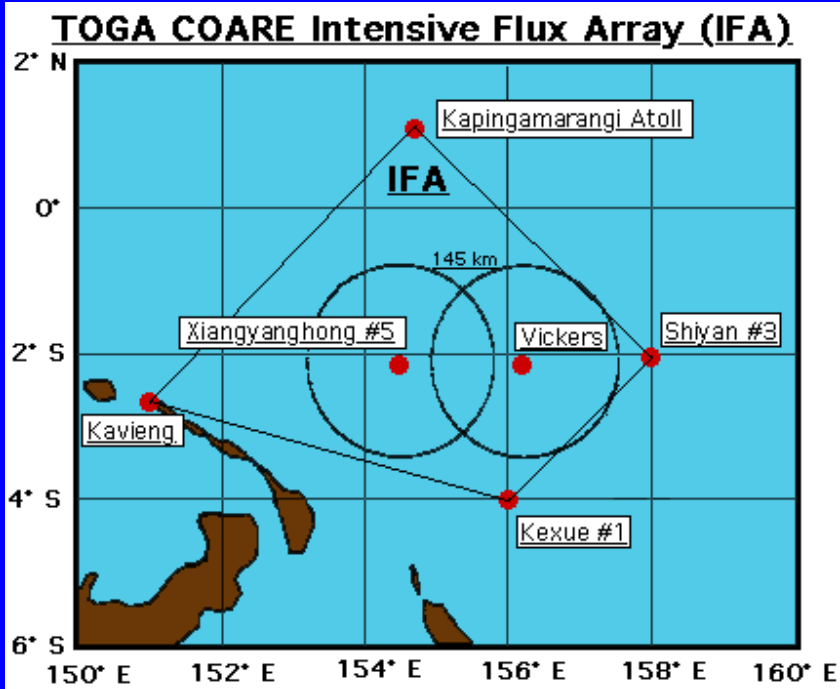




Dec 92-Feb 93



Achievement of shipborne Doppler radar operations



First there was GATE.....

Objectives of TOGA COARE

Air-sea interaction

MJO/convection

Leading to better simulations by coupled upper-ocean and atmospheric models

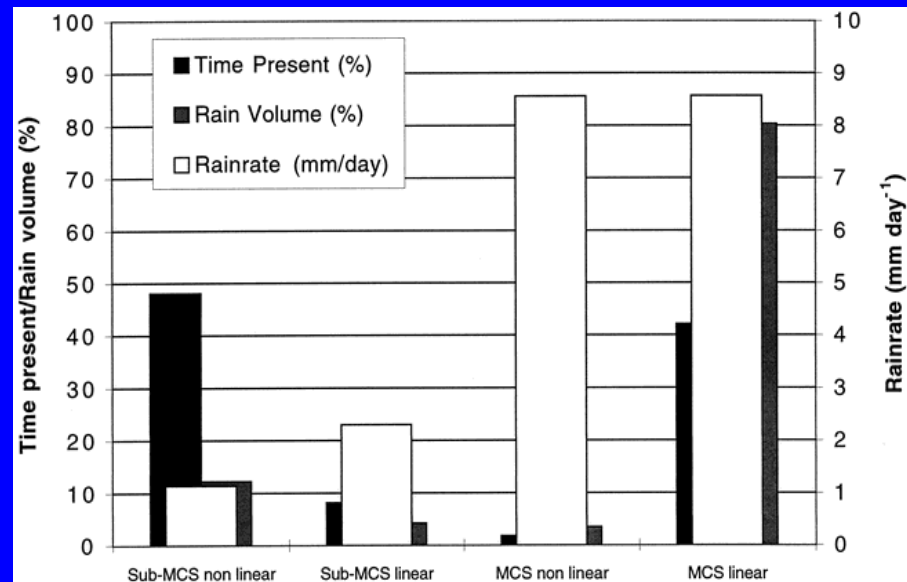
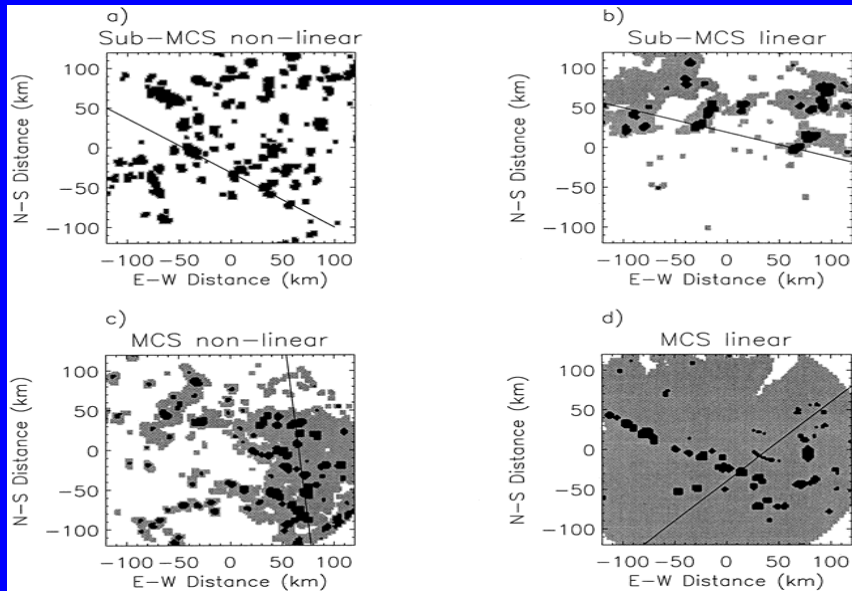
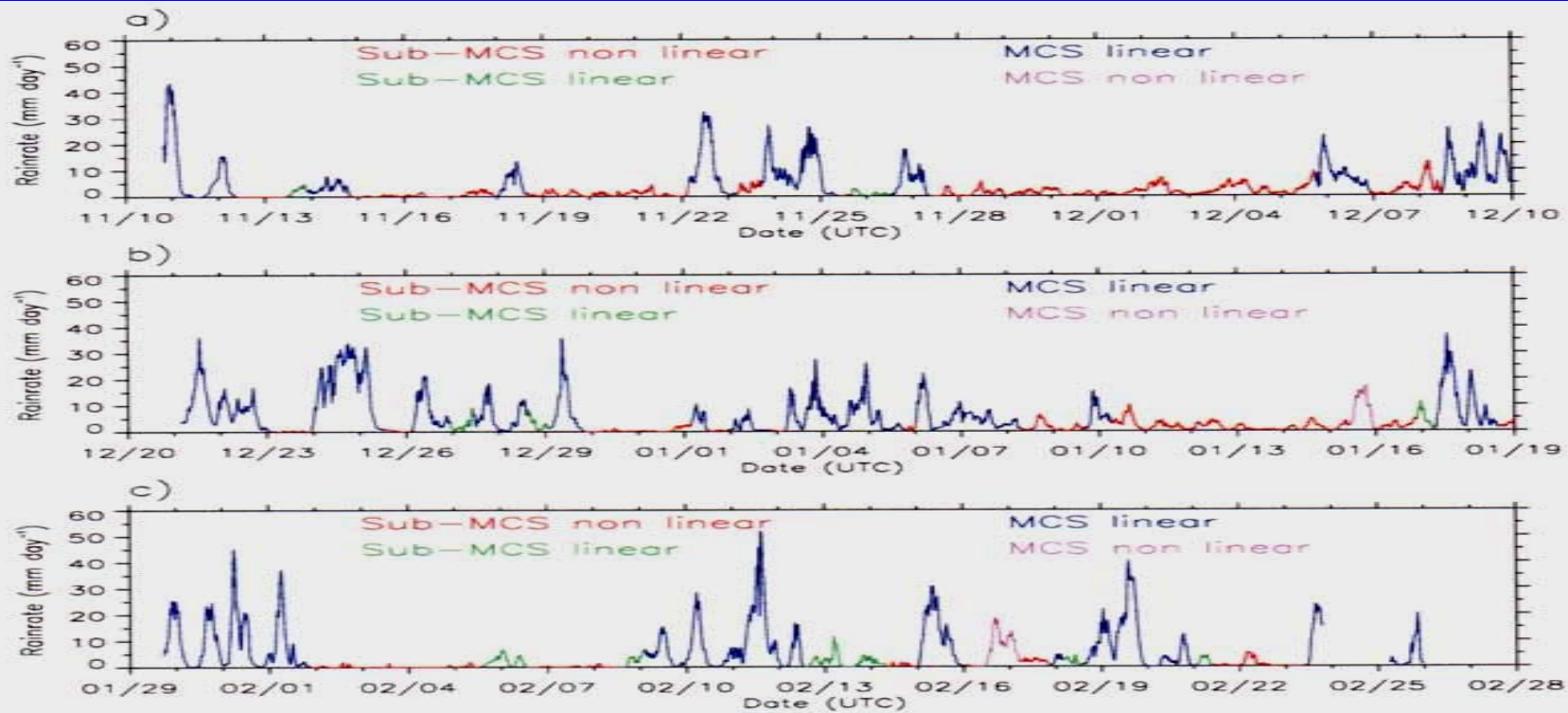




Figure 2: Picture of NOAA's R/V Ronald H. Brown taken from the Rugged-Hull Inflatable Boat, which was returning from a successful sphere calibration exercise. The radome atop the ship shows the location of the C-band Doppler radar.

KWAJEX 99

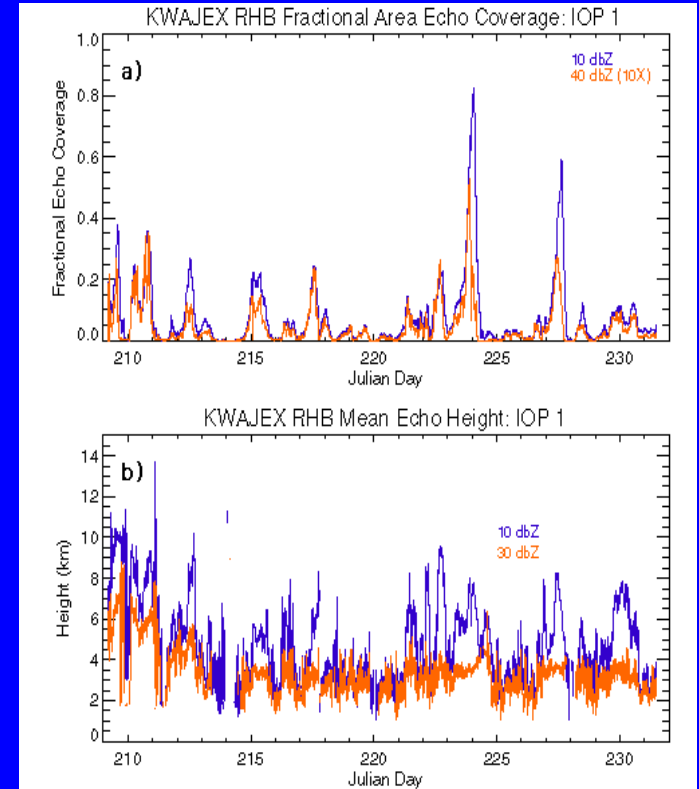
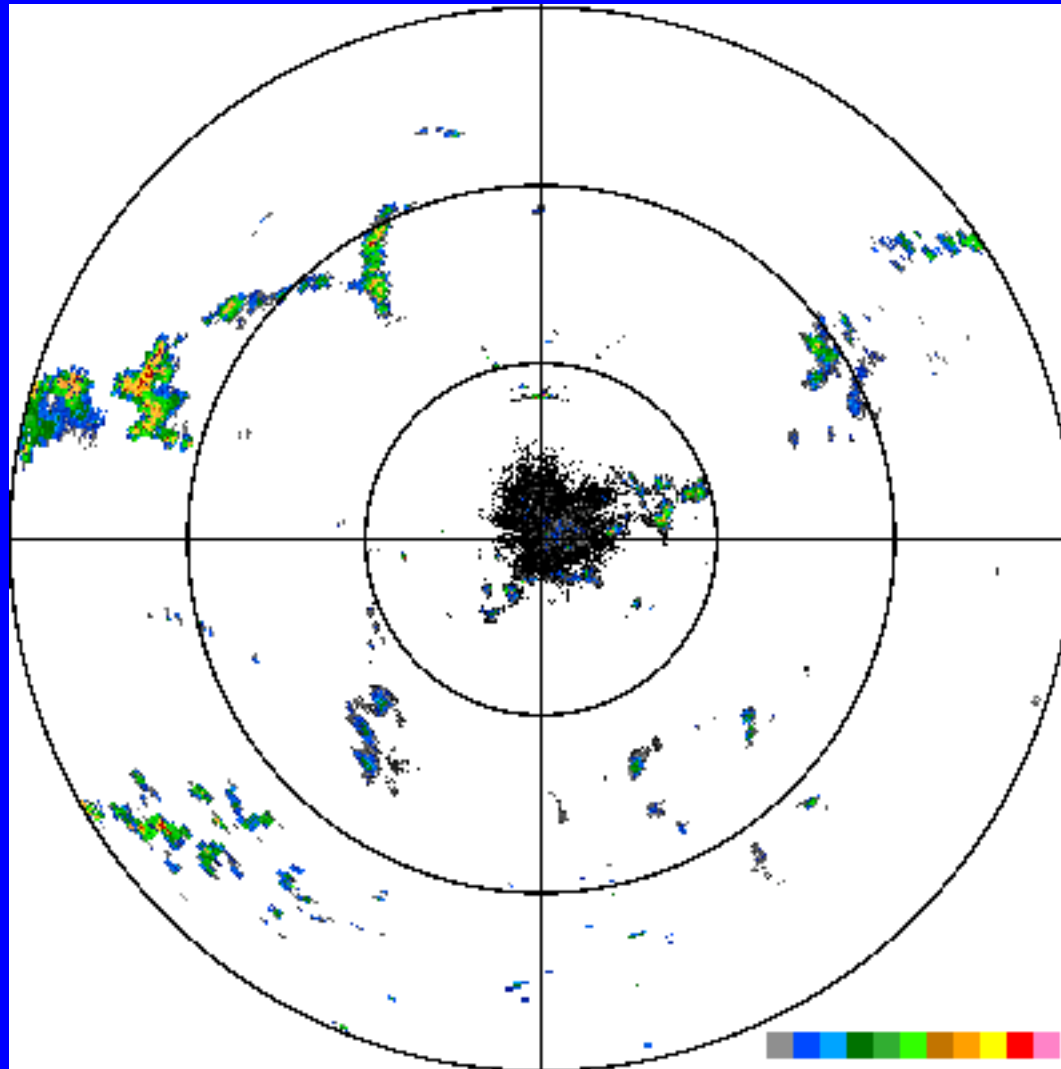


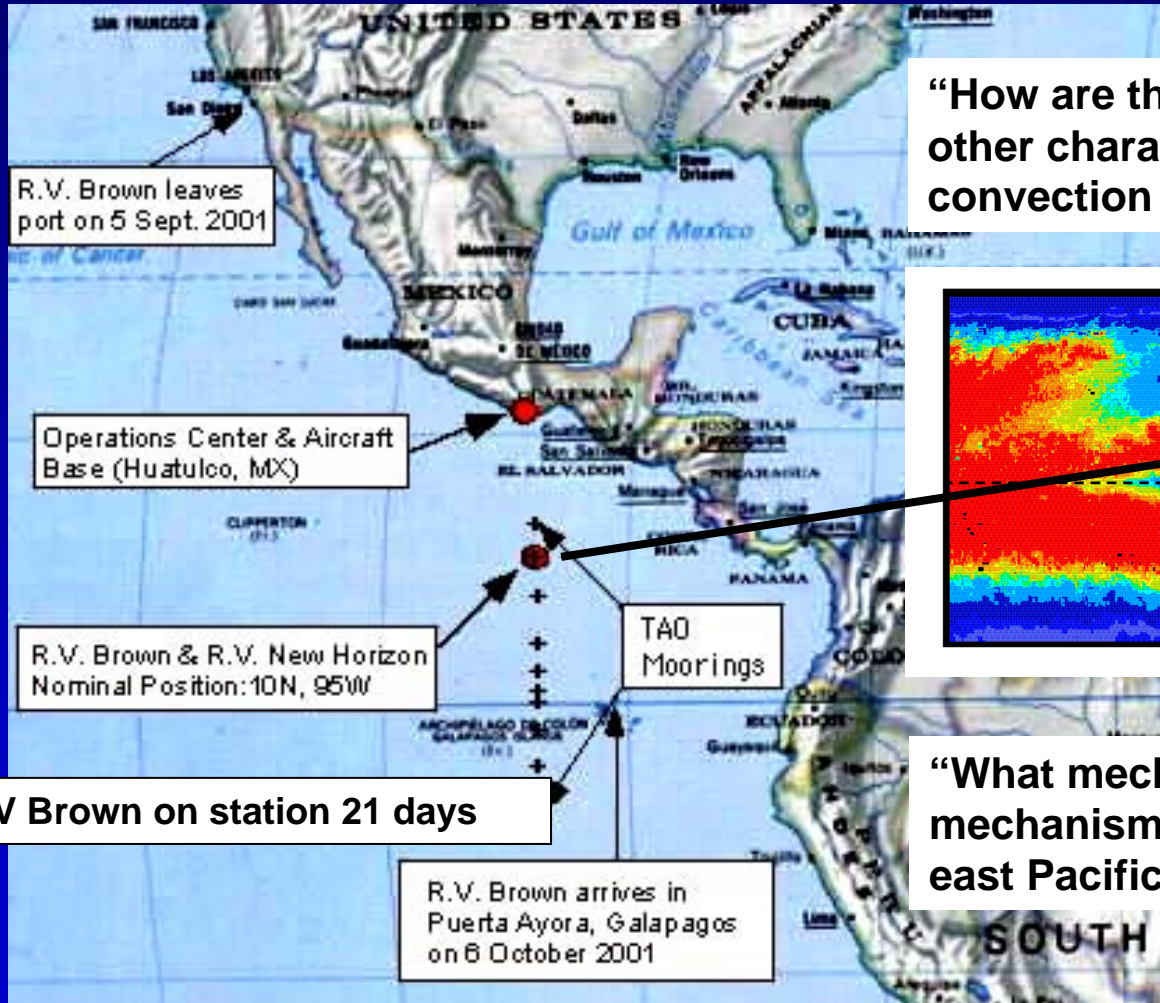
Figure 5: Radar observations of the a) Fractional Echo Area coverage for the 10 dBZ and 40 dBZ contours; and b) mean echo top heights of the 10 dBZ and 40 dBZ contours, as observed by the RHB radar during IOP-1 of KWAJEX.

August 10, 1999

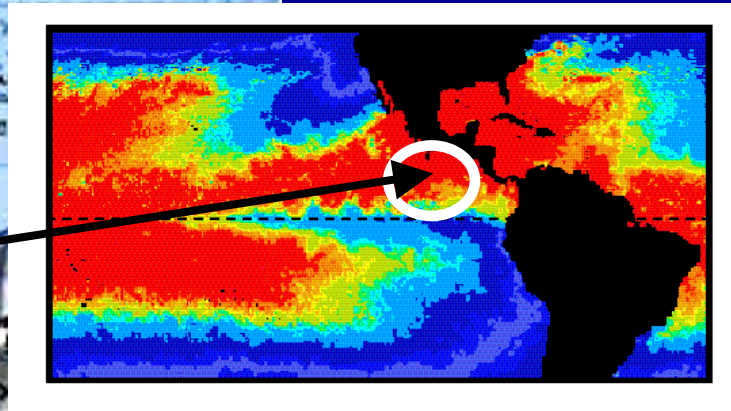


PACS Eastern Pacific Investigation of Climate and the Coupled Ocean-Atmospheric System

EPIC 2001 ITCZ Operations (Sept. 2001)



“How are the location, strength, and other characteristics of ITCZ convection determined?”



•R/V Brown on station 21 days

“What mechanism or set of mechanisms forces convection in the east Pacific ITCZ?”

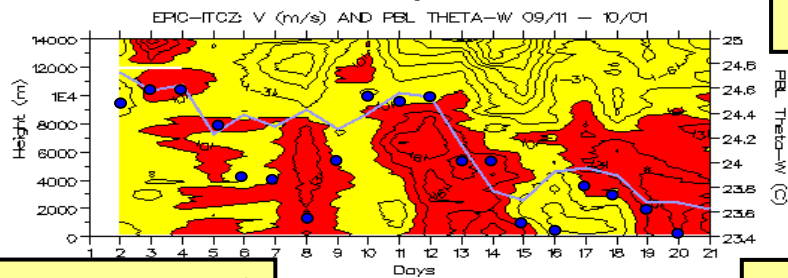
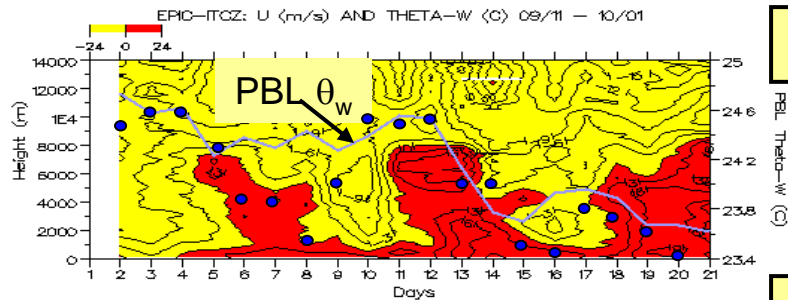
R/V Ronald H. Brown During EPIC 2001

□ Instruments

- ★ • Radar (Scanning C-band Doppler; Vertically pointing Ka-band Doppler)
- ★ • Rawinsonde
 - 915 MHz wind profiler
 - DIAL/Mini-MOPA LIDAR
 - Multi-spectral radiometers
 - Air-sea flux system
 - Meteorological observation (T, RH, P), aerosol concentrations, rain gauges and ceilometer
 - Oceanographic measurements including SST, CTD and ADCP

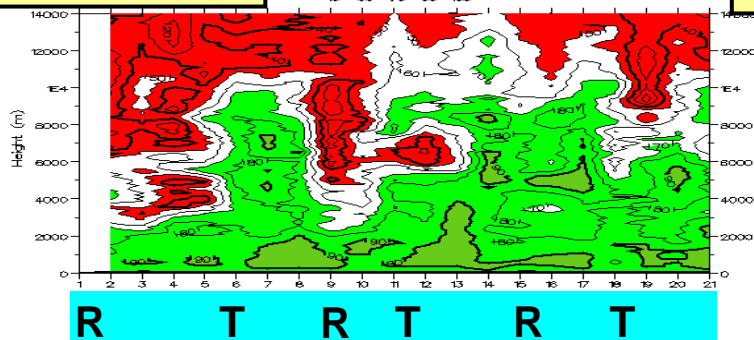


R/V Brown Sounding Observations During EPIC 2001



CG Lightning = ●

RH



- Soundings launched 6X/day (9/11/01-10/03/01)
- Time series indicate passage of 3 Easterly Waves (winds indicate westward tilt w/height)
- Peak instability and lightning occurs 0-2 days *prior* to trough passage
- Mid/upper trop. Drying in and behind ridge. Slight eastward tilt w/height of moisture through trough- most evident in last two events.

DYNAMO

Desire to propose construction of a new, C-band,
Doppler-polarimetric radar.

MRI proposal possibility?

(Waiting for program announcement from NSF)

Time line appears reasonable given that several
vendors make radars of this sort. Stabilization
approach?