A brief overview of in-situ ozone measurements with the LMD B-Bop instrument during the Seychelles campaign

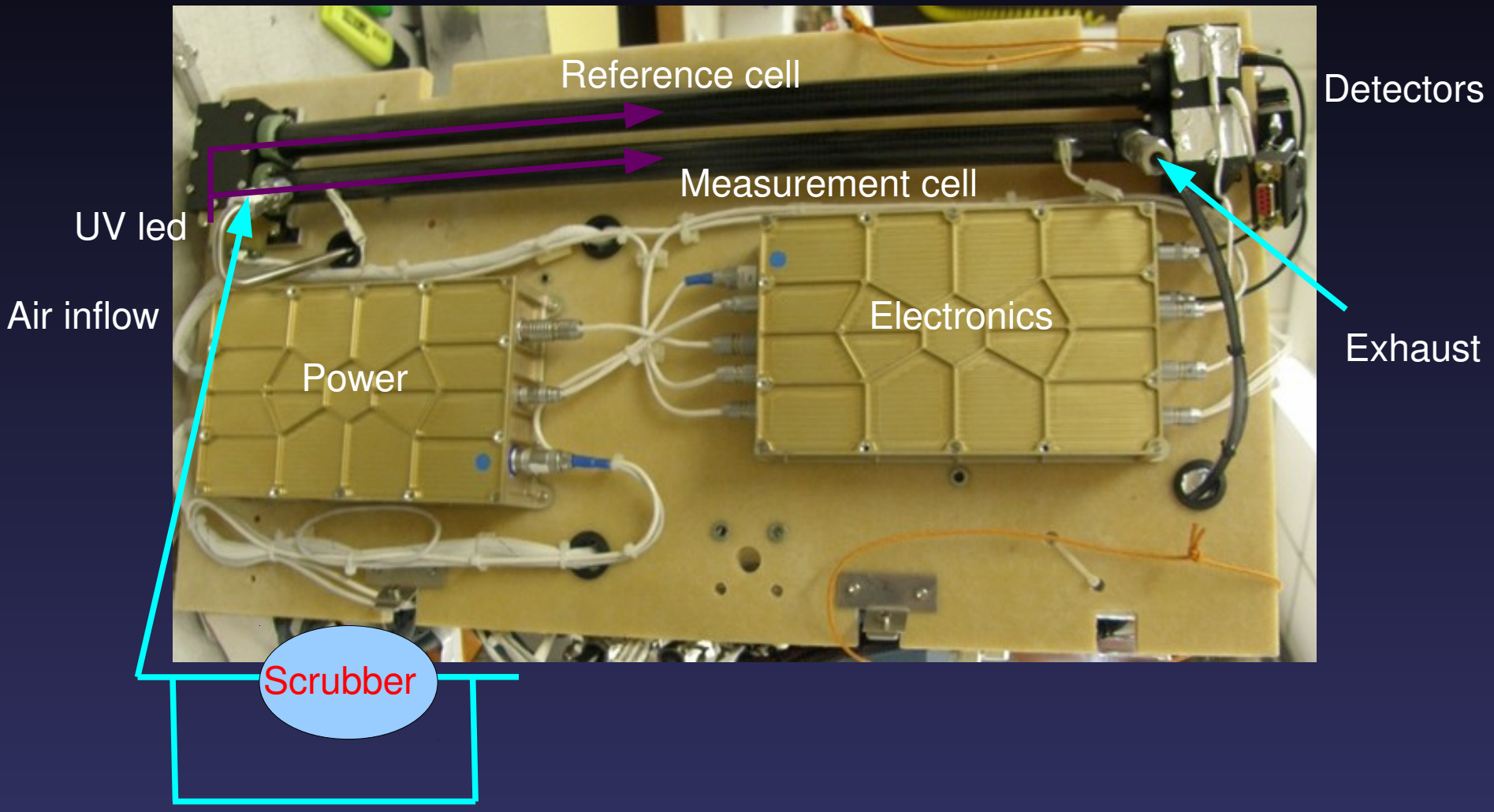
A. Hertzog (Laboratoire de météorologie dynamique)
F. Danis, J. Bordereau, B. Brioit (LMD)

Thanks to L. Kalnajs and L. Avallone


DIRE STRAITS
Issued in 1978 !!!

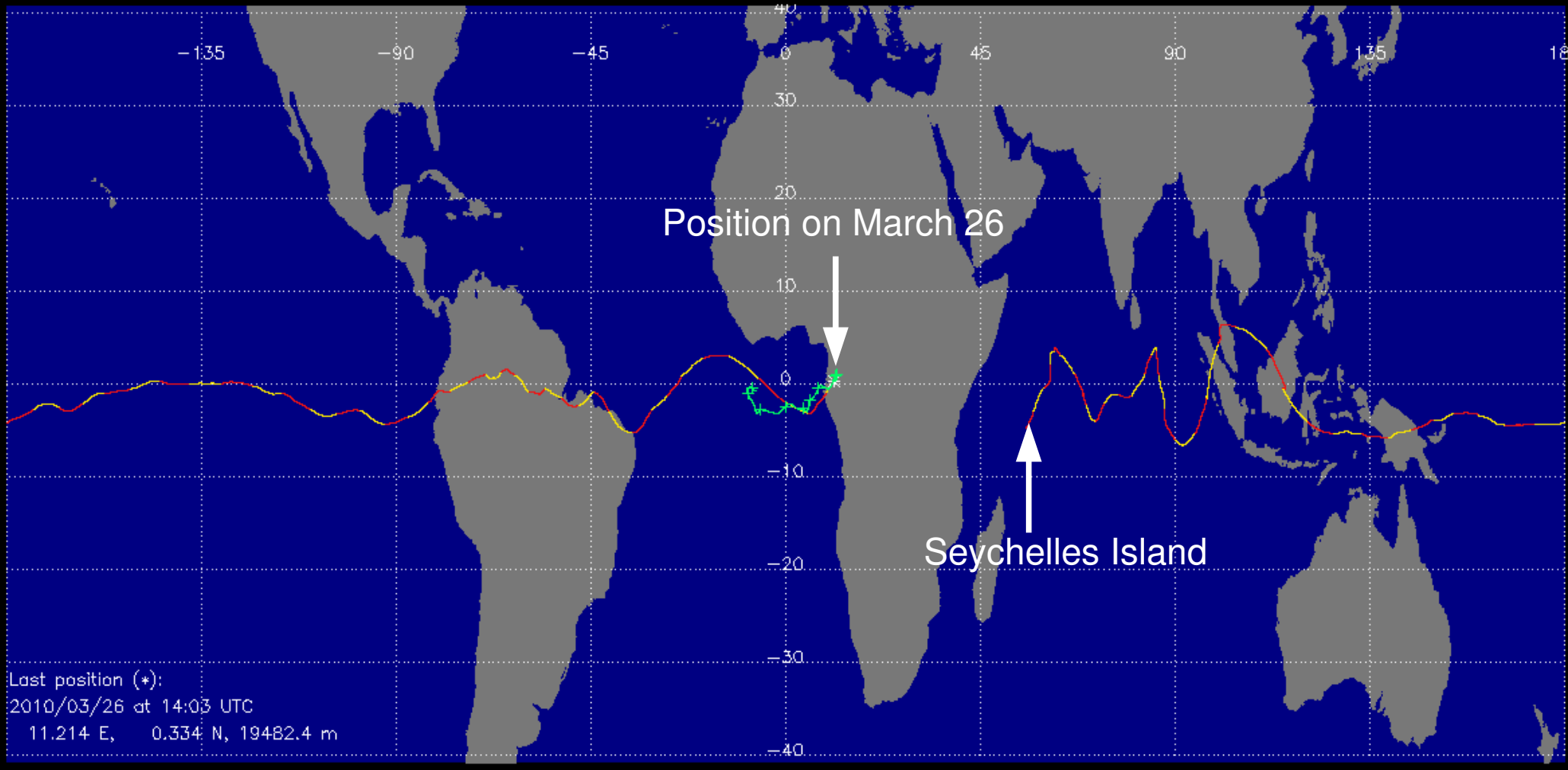
Principle of measurement

- B-Bop is a UV-photometer that works near the maximum of ozone absorption in the Hartley bands (255 nm)

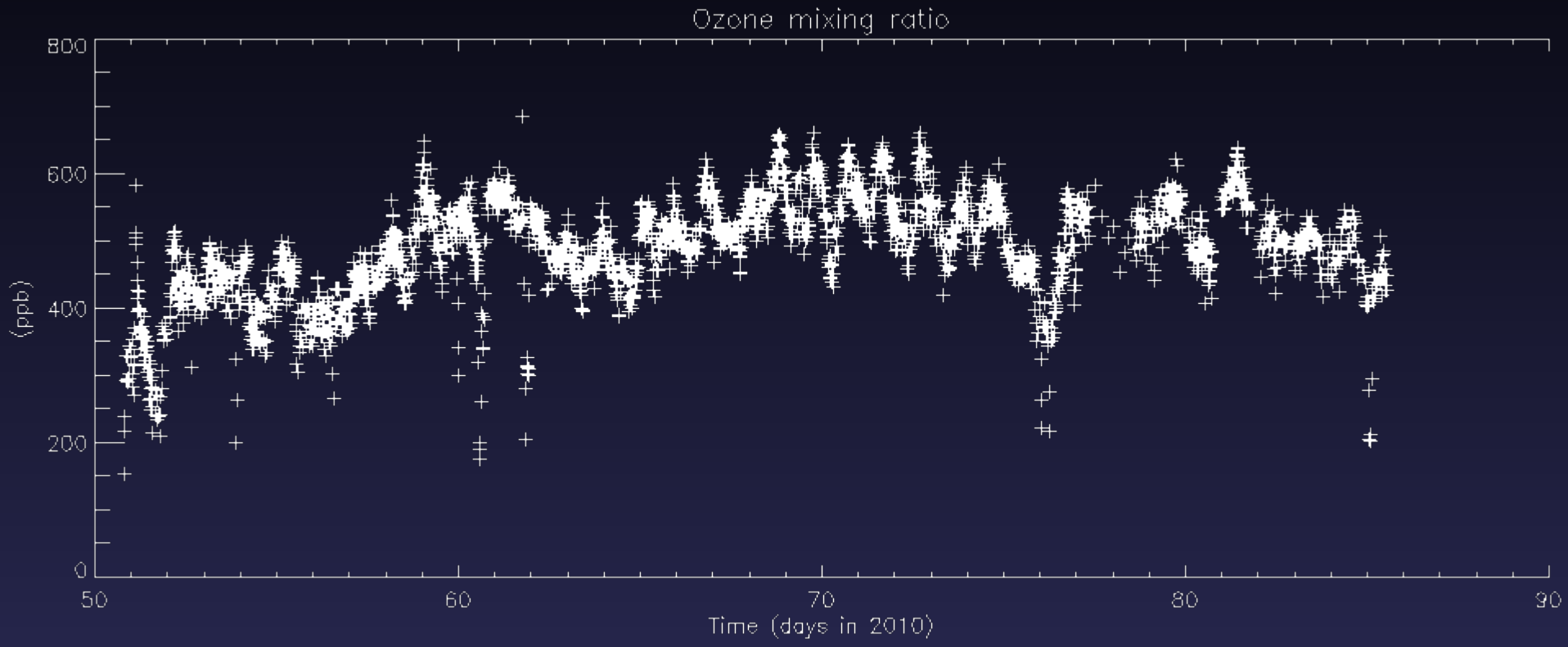


Test flight in Seychelles Island

- B-Bop has been observing ozone since Feb. 10, on pre-Concordiasi PSC-1 flight @ ~19.3 km (63 hPa)

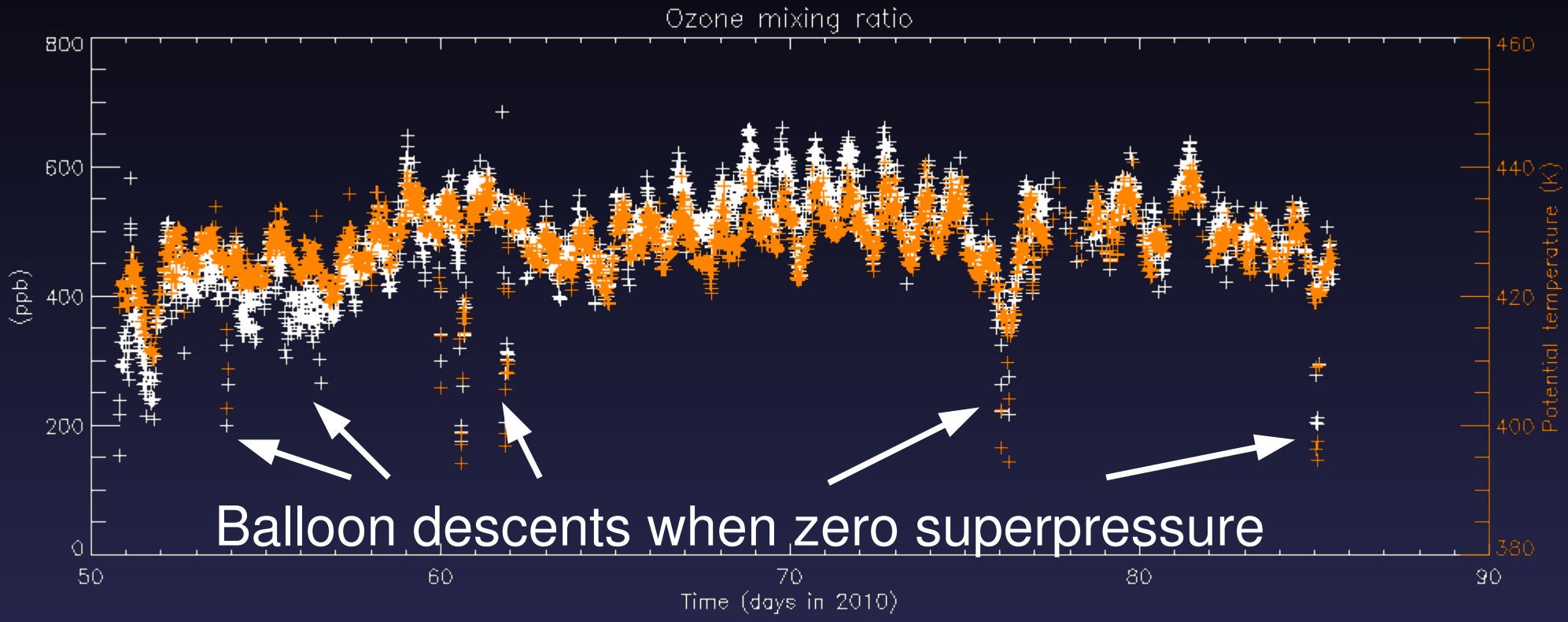


Preliminary results



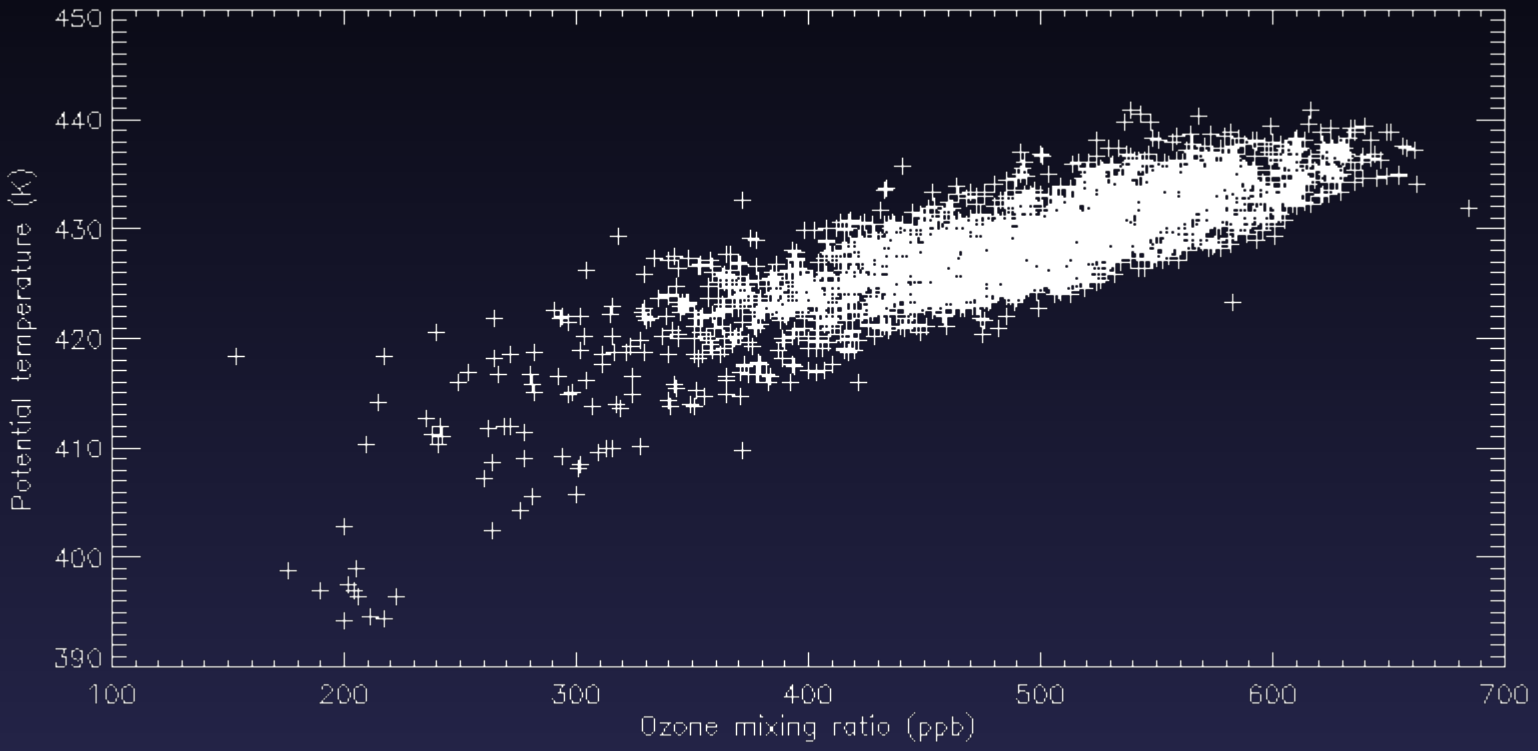
Ozone

Preliminary results



Ozone Potential temperature

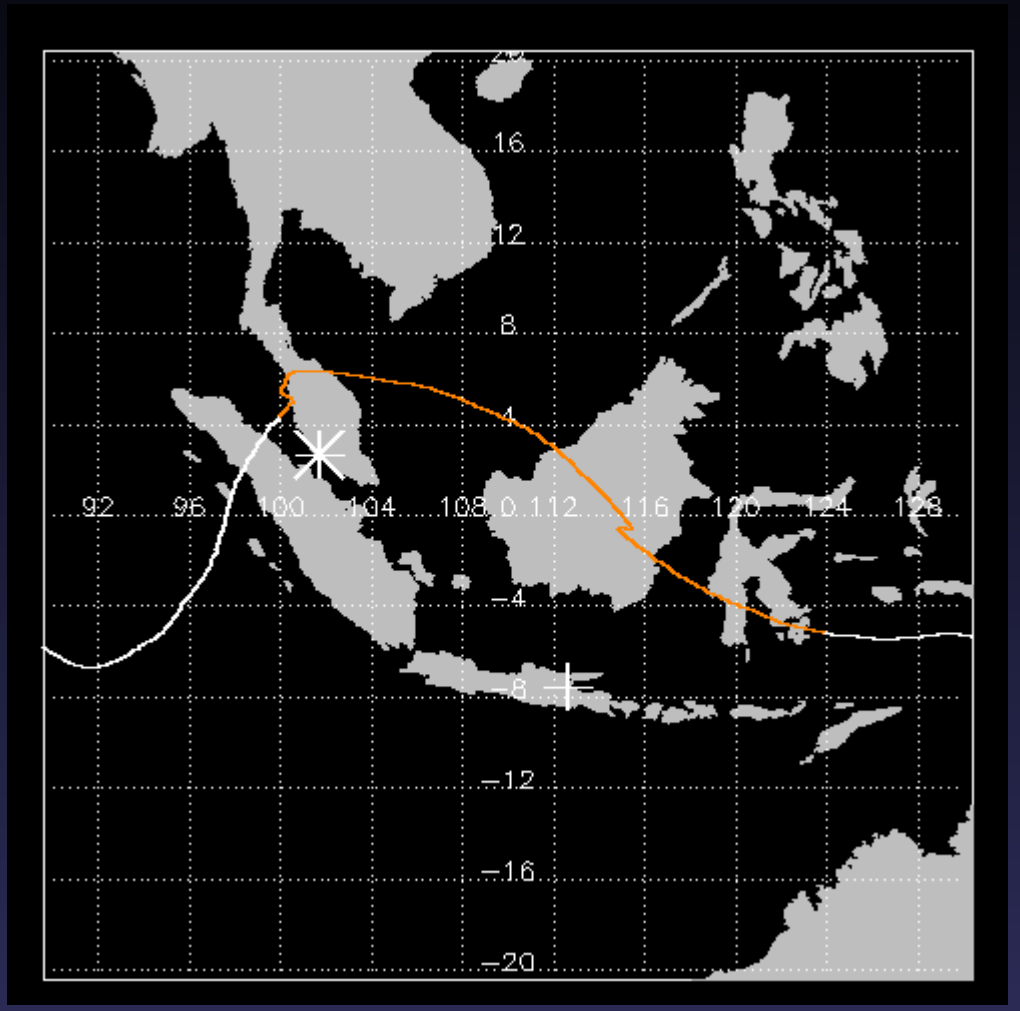
Preliminary results



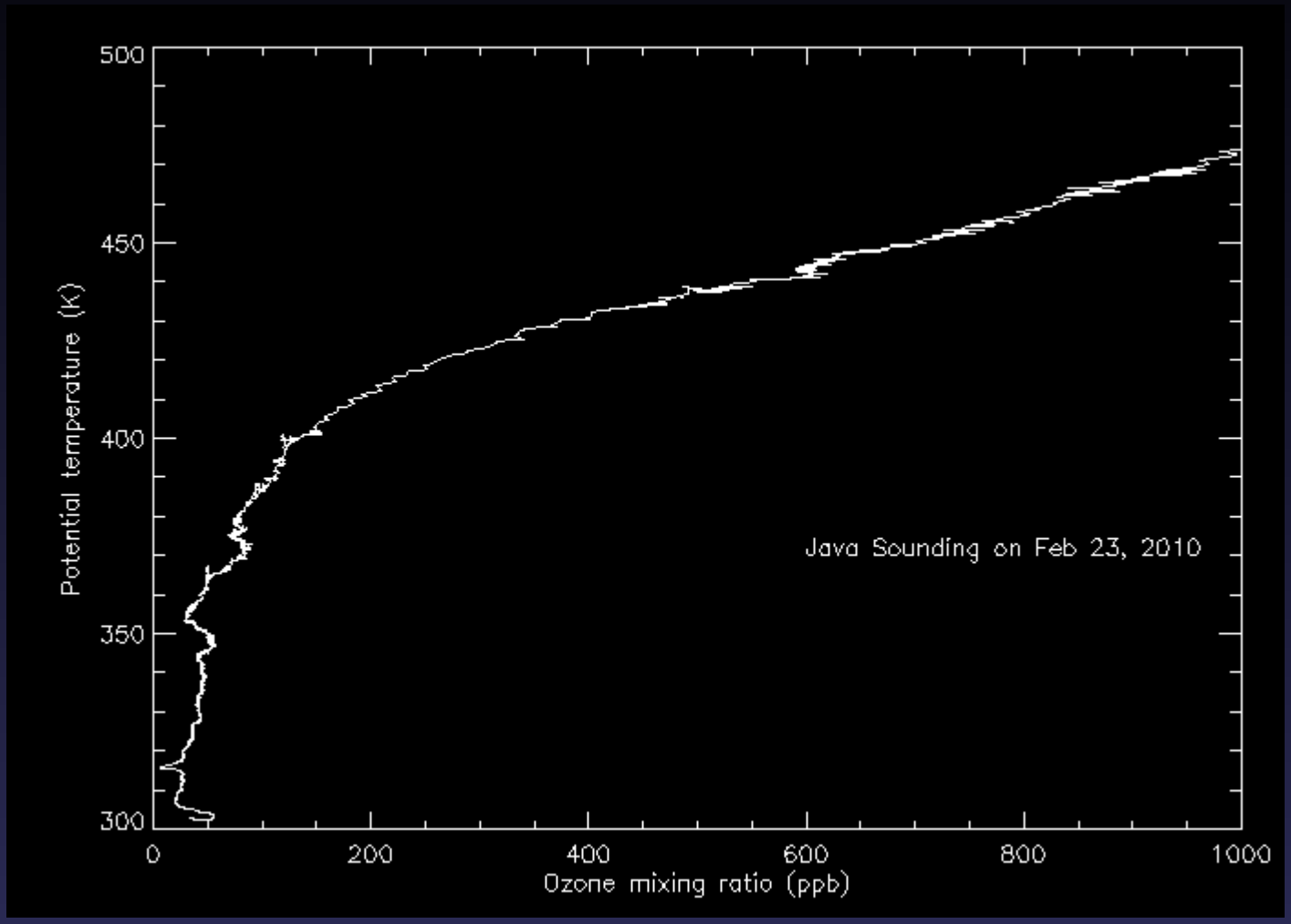
As expected, good correlation between χ_{O_3} and θ.

Comparisons with soundings

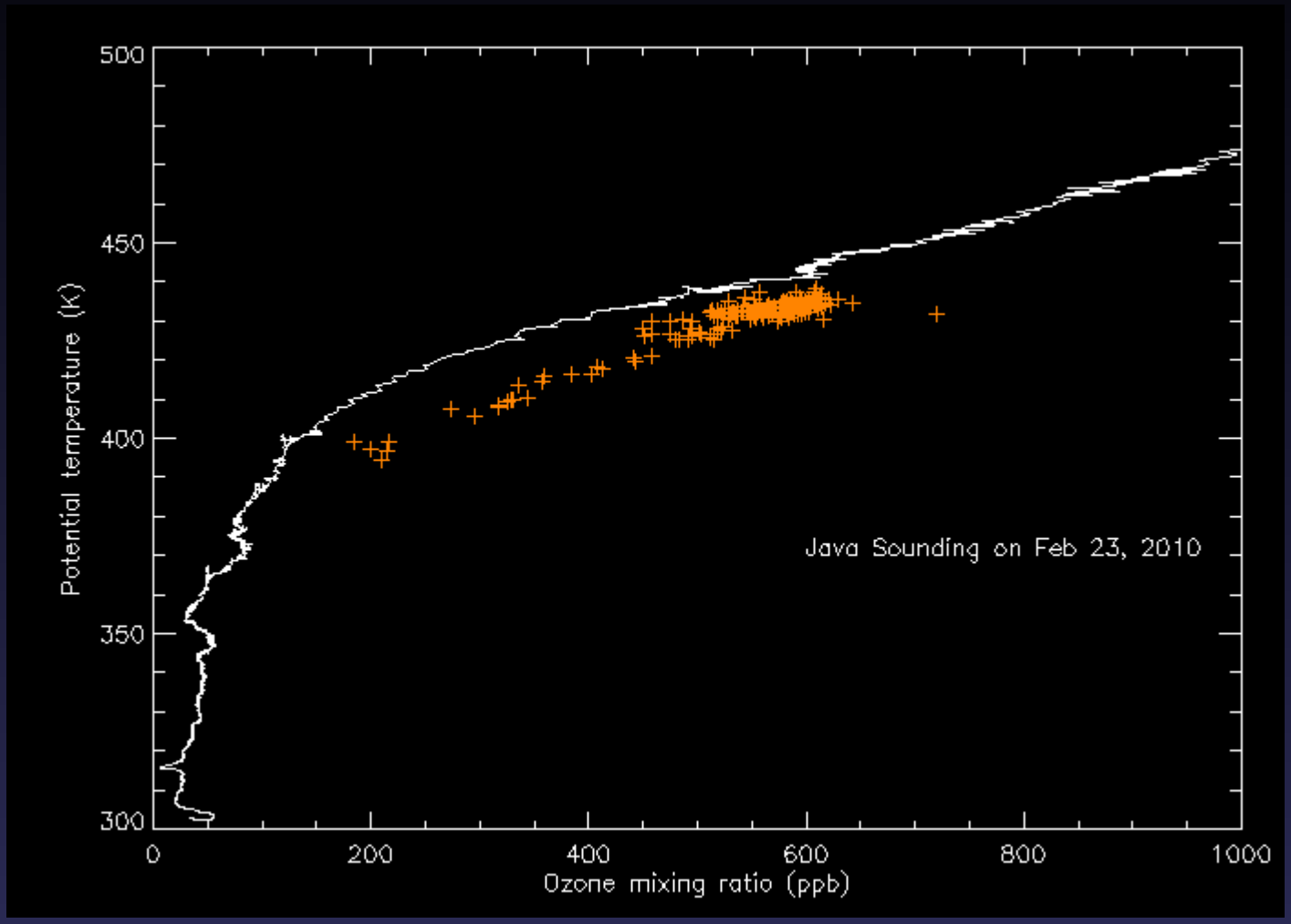
- B-Bop measurements btw March 1-3, 2010
- Soundings from SHADOZ
  - Java on Feb 23, 2010
  - Kuala-Lumpur on March 3, 2008
  - Java on Feb 28, 2008



Comparisons with soundings

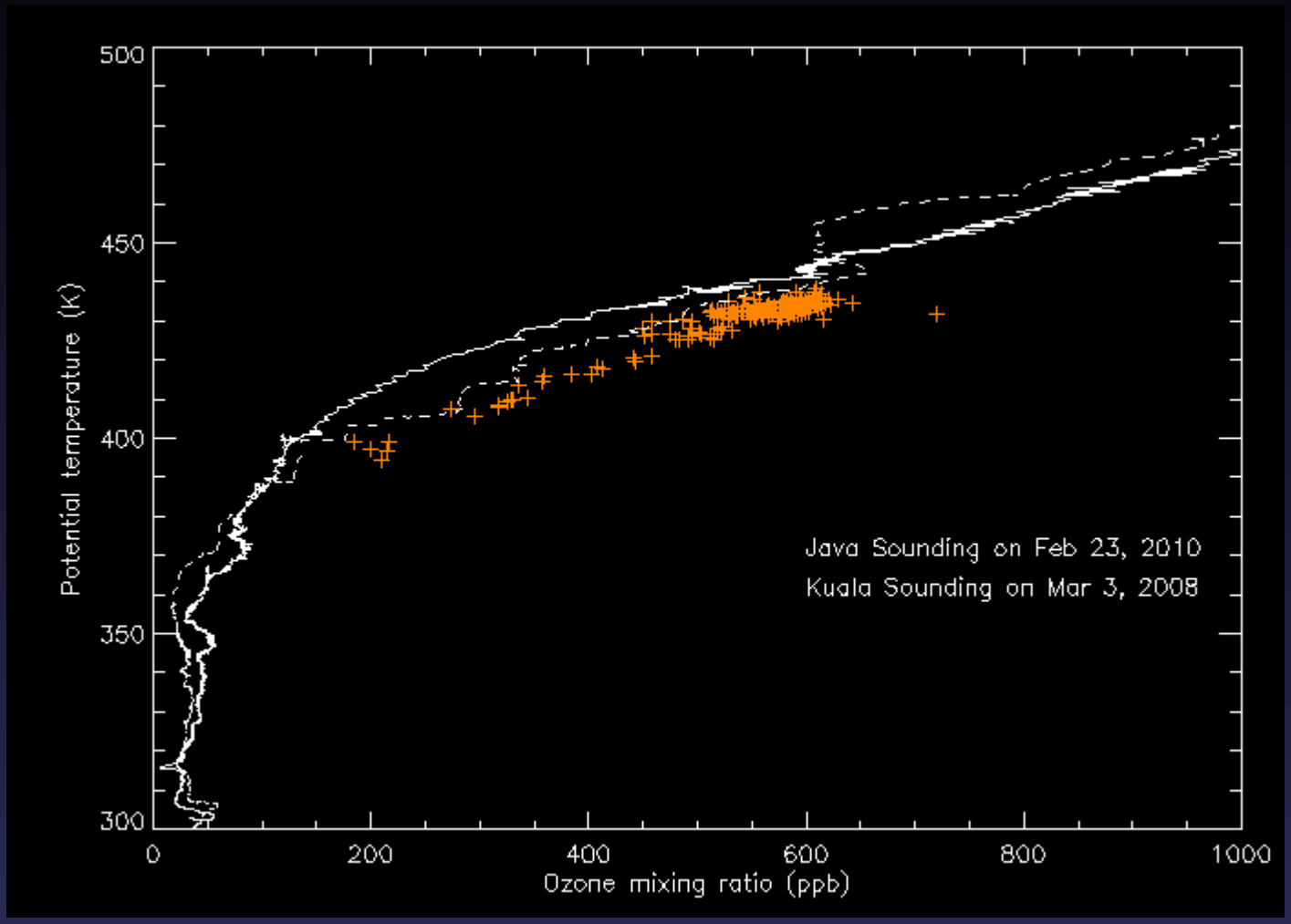


Comparisons with soundings



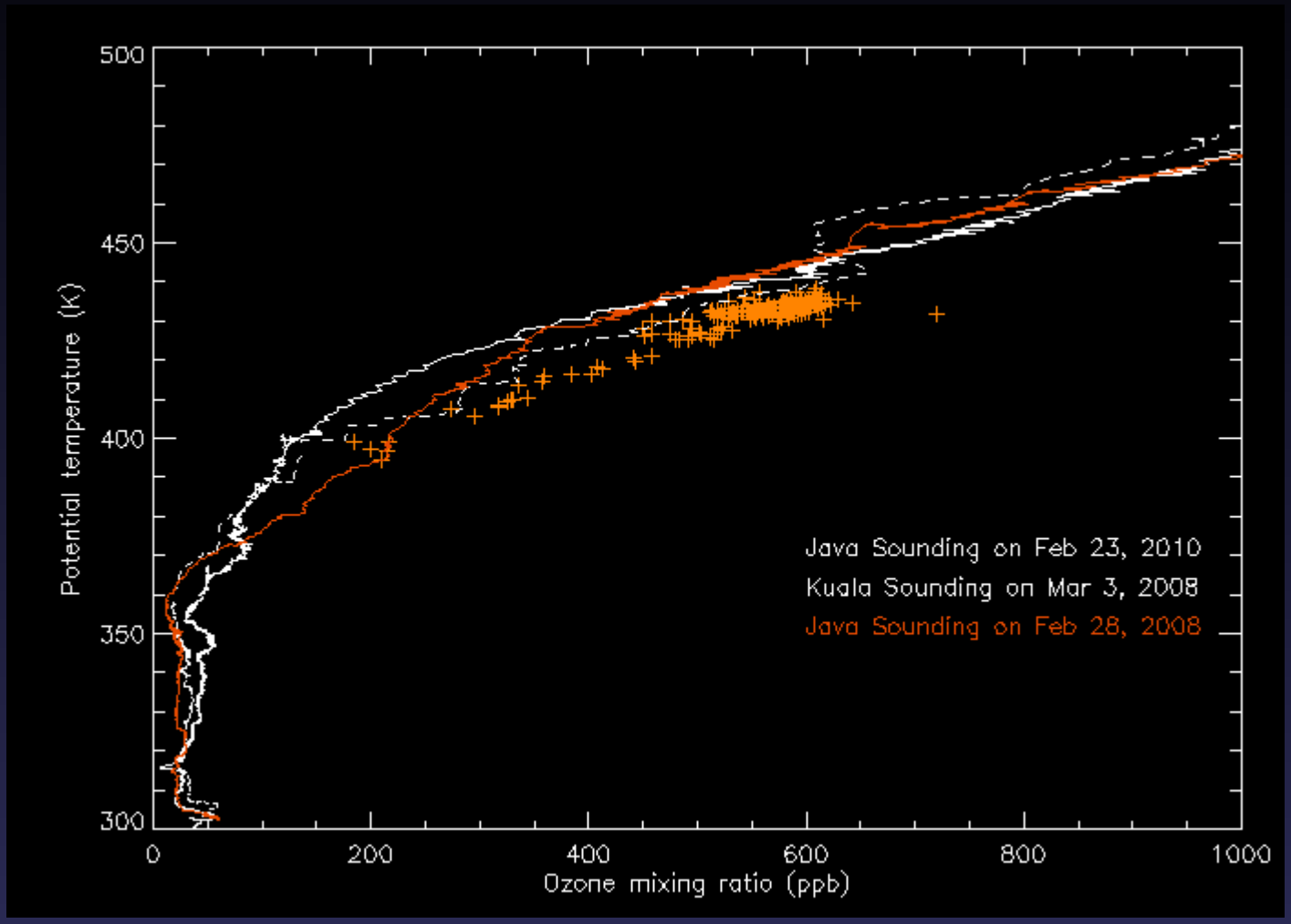
30% overestimation

Comparisons with soundings



10% overestimation

Comparisons with soundings



Preliminary conclusions

50 days of observations => beyond expectations

Ozone retrievals are still preliminary and can likely be improved

Possible overestimation of ozone, but needs further confirmation. Coordinate simultaneous ozone sounding during Concordiasi.

1-σ precision estimated at ~ 1.3 ppb from calibration measurements