

Comments on "Atmospheric Temperatures Near the Tropical Tropopause: Temporal Variations, Zonal Asymmetry and Implications for Stratospheric Water Vapor"

ROGER EDSON*

Department of Atmospheric Science, Colorado State University, Fort Collins, CO 80523

12 December 1985 and 1 July 1986

In a recent article by Frederick and Douglass (1983), the authors used eight years of rawinsonde data from eight stations to analyze the spatial and temporal variations of temperatures in the vicinity of the tropical tropopause. The eight stations used are indicated in Table 1.

In this paper they attempted to show how the four stations from the eastern hemisphere have colder tropopause temperatures than the four stations from the western hemisphere. In order to avoid variations in latitude, they indicated that the spread in latitude of the Group E sites (18°S–13°N) was essentially the same as the Group W sites (12°S–18°N). They further went on to make several east–west station comparisons and,

in particular, compared Lima (12°S) with Koror (18°S) in order to "minimize the latitude differences". (See their Figs. 3 and 6.)

The problem that I have with this analysis is that Koror (WMO station 91408) is not located in the Southern Hemisphere as they indicated, but in the northwestern Pacific at 7°20'N, 134°29'E (National Climatic Center, 1981). Although not as badly mispositioned as Koror, I found other stations in Table 1 mislocated by several degrees as well. In an attempt to see if the authors actually misnamed the Southern Hemisphere station, the National Geographic Atlas of the World (1981) was consulted; no station nor island was found located close to 18°S, 179°E.

So, questions now exist as to what source the authors used to locate their stations. How does this affect their results presented in Figs. 3 and 6, and finally, to what degree have they resolved the possibility of opposite hemisphere variations in tropopause temperatures since it does not appear that they presented a southwestern Pacific representative?

TABLE 1. Identity and location of rawinsonde stations.^a

Stations	Latitude	Longitude	Group
Santa Domingo (Atlantic)	18°N	70°W	W
Johnston Is. (Pacific)	18°N	170°W	W
Curacao (Atlantic)	12°N	68°W	W
Lima (Peru)	12°S	77°W	W
Guam (Pacific)	13°N	144°E	E
Ponape (Pacific)	7°N	158°E	E
Truk (Pacific)	5°N	150°E	E
Koror (Pacific)	18°S	179°E	E

^a From Frederick and Douglass, 1983.

REFERENCES

- Frederick, J. E., and A. R. Douglass, 1983: Atmospheric temperatures near the tropical tropopause: Temporal variations, zonal asymmetry and implications for stratospheric water vapor. *Mon. Wea. Rev.*, **111**, 1397–1403.
- National Climatic Center, 1981: Monthly climatic data for the world. December, National Climatic Center, Asheville, NC, **34**, p. 20.
- National Geographic Society, 1981: *National Geographic Atlas of the World*. Washington, D.C., p. 230.

* Present affiliation: USAFETAC/DNE Scott AFB, IL 62225.