

## ***Interactive comment on “Maïdo observatory: a new altitude station facility at Reunion Island (21 S, 55 E) for long-term atmospheric remote sensing and in-situ measurements” by J.-L. Baray et al.***

### **Anonymous Referee #3**

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This paper is not a science paper but rather describes the facility and instrumental capabilities of a new high altitude atmospheric observatory on Reunion Island in the Southern Indian Ocean. The paper makes a good case for the uniqueness of the location of the observatory and the data to be obtained there, as well as the value of such data to understanding atmospheric processes. As such, I believe that the paper should be published and is suitable for AMT. Many of the instruments being installed at Maïdo have been operational in or near St. Denis. I agree with reviewer number 2 in suggesting a tabular presentation of these instruments with the length of

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the data record and websites to access that data. This information could be provided by expanding Tables 1 and 2.

There are a number of minor corrections;

Pg 6371, Line 1 of the title: should read “a new high altitude..”

Pg 6373, line 11; “allows for the opportunity:”

Pg 6374, line 13: “The first atmospheric instruments,”

Pg 6374, line 15: “the new observatory located. . .”

Pg. 6375, line 25: with respect to the discussion of the number of clear nights at Maïdo versus St. Denis, it would be helpful if there were some information as to how these differ. Is there a climatology of clear vs cloudy nights available? If so, this should be included.

6377, lines 2 - 3: “the idea of a high-altitude station. . . was first proposed in 1989.”

6378, line 7: “Several early studies, based on radio-sounding and ozone Lidar measurements, characterized the effects of biomass burning on tropospheric ozone; studied stratosphere/troposphere exchange; and, examined isentropic. . .”

Pg 6379, line 12: “mainly composed of Lidar”. . .

Pg, 6379, Line 28: synchronized, and coupled. . .”

Pg 6380, Line 23: “consists of a wavelength pair (289 and 316 nm) obtained by Raman shifting the 4th harmonic of the Nd-YAG laser in a high pressure deuterium cell.”

Pg 6380, line 26 – 27: “The length. . .” Does this sentence imply that the beam is allowed to expand within the Raman cell before re-collimating it? Can you clarify?

Pg. 6381, line 6: “In order to compensate for this, we have added. . .” This sentence seems to indicate that the low altitude measurements are not made at the same time as the higher altitude measurements – is this true?

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Pg. 6381, line 21: “and a power > 9W”

Pg. 6390, line 17: “physico-chemical

Pg. 6390, line 27 : “temperature and relative humidity are continuously. . .”

Pg. 6391, line 5: “sursaturation” should be “supersaturation”

Pg. 6391, line 15: “aerosols without local contamination”

Pg. 6391, line 27: “usefull” should be “useful”

Pg. 6403, Figure 3 (b): It is difficult to make out where the lidar data ends at the low altitude end – larger graph or heavier lines would be helpful

Pg. 6304, Figure 4: Legend is missing lines for the two lidar profiles.

Pg. 6405, Figure 5: Information on the integration time of the lidar profile would be helpful.

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Interactive comment on Atmos. Meas. Tech. Discuss., 6, 6371, 2013.