Srianand *et al.* Reply: In the preceding Comment [1], Murphy, Webb, and Flambaum criticize the fitting procedure we used in two previous papers [2,3] and conclude that [2] offers no stringent test to previous evidence for varying α. We think this is a hasty conclusion as (a) our procedure is robust as shown in [3]; (b) the data used by Murphy *et al.* [1], in particular, the error array, is different from ours and there are differences in the fitting procedure; (c) despite these differences, 70% of their individual measurements are consistent with that quoted in [3].

Point 1.—In [3], we explain our procedure in detail. In particular, we used $\Delta\alpha/\alpha$ as an external parameter (as in [5]) when Murphy *et al.* used it as an additional fitting parameter. This choice has been tested extensively using simulations. To reiterate this point, we have refitted the systems in our sample using VPFIT keeping $\Delta\alpha/\alpha$ as an external parameter (see Fig. 1). Our new results (closed circles) match our original results (squares) and Murphy *et al.*'s (open squares) within 1σ. We point out that fluctuations in χ^2 curves get indeed smoothed after a large number of iterations but the results from the first and last iterations are found to be very similar. We find significant differences in only two cases.

Point 2.—In the course of the analysis presented in [3] we define two errors for each pixel: one is the error calculated by the ESO-pipeline and one is calculated from the scatter of the different exposures. In principle the two errors should be of the same order but usually they are not because of the nontrivial observational procedure. This can be estimated by comparing the above errors with the scatter in the continuum. Murphy *et al.* used the data made available on the web with standard errors. In Fig. 2 we show the signal-to-noise ratio (SNR) $(1/\sigma)$ used by Murphy *et al.* (dots) and by Srianand *et al.* (stars) versus the SNR as measured in the continuum around the absorption lines used in our analysis. Clearly the errors used by Murphy *et al.* are underestimated. Ours are consistent in the low SNR regime and slightly overestimated at high SNR. These measurements are done in the continuum and differences are more crucial in the lines (where we cannot perform this experiment). In addition, our procedure takes into account the differences in spectral resolution in different settings, while this is not the case with VPFIT.

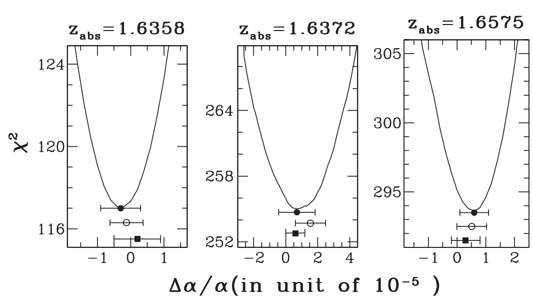

FIG. 1. Examples from our reanalysis (see point 1).

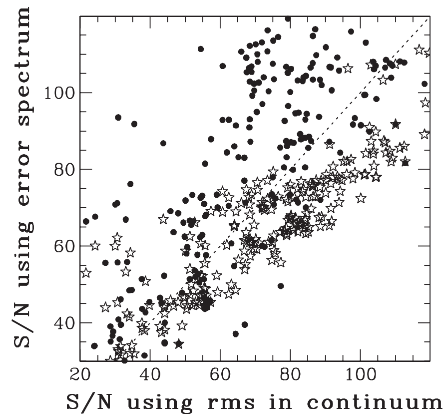

FIG. 2. Comparison of two error spectra.

Point 3.—Despite these differences, it is clear from Fig. 3 (left panel) and Table 1 of Muphy *et al.* [4] that their measurements match ours [3] at $\leq 1\sigma$ level for 16 systems. The corresponding weighted mean is $\Delta\alpha/\alpha = (+0.06 \pm 0.18) \times 10^{-5}$. For the same systems Chand *et al.* find $\Delta\alpha/\alpha = (+0.03 \pm 0.09) \times 10^{-5}$. It is also easy to recognize that only two $>4\sigma$ deviant systems (the $z = 1.5419$ system towards 0002–422 [$\Delta\alpha/\alpha = (-4.655 \pm 0.988) \times 10^{-5}$] and the $z = 0.8593$ system towards 0122–380 [$\Delta\alpha/\alpha = (-4.803 \pm 0.941) \times 10^{-5}$]), dominate the final result by Murphy *et al.*. Excluding these systems we get $\Delta\alpha/\alpha = (-0.19 \pm 0.16) \times 10^{-5}$ for 21 points. Our reanalysis using VPFIT keeping constant resolution across the spectrum and with identical initial guess parameters leads to $\Delta\alpha/\alpha = (0.01 \pm 0.15) \times 10^{-5}$ for 21 systems (excluding two systems that deviate at more than 3σ level) with very little scatter ($\chi^2_\nu \sim 1$) contrary to the claims by Murphy *et al.* [4]. Thus we believe, the results presented in [2,3] are robust (although errors are probably larger) and are not due to the failure in our fitting procedure.

Our result disagrees with earlier claims for a variation of α by $>3\sigma$. We are awaiting results from the full independent analysis of ultraviolet and visual Echelle spectrograph data by Murphy *et al.*.

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