

1 **Appendix**

2 We present additional figures, corresponding to Figure 2 (b), of temperature diurnal amplitudes
3 and phases over more altitudes (20, 40, 60, 80, 90 km) and latitudes (0°, 40°).

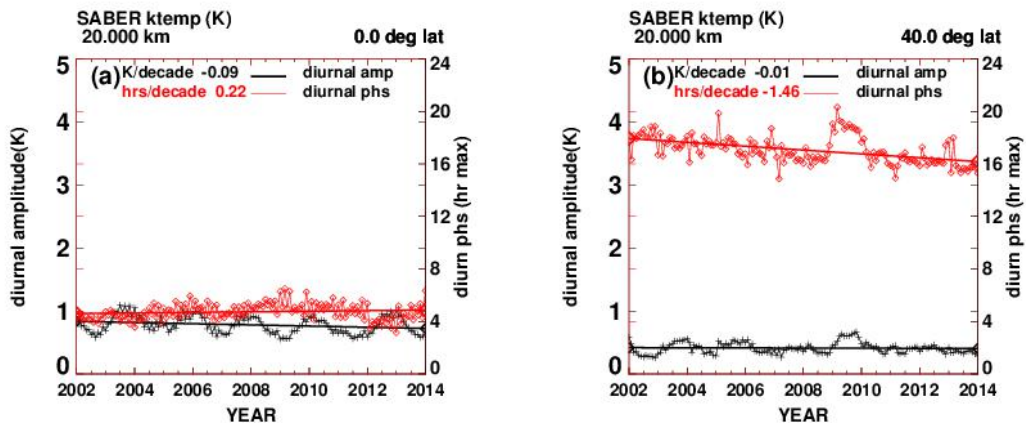
4 The left panels (a) of each Figure show temperature tidal diurnal amplitudes and phases at
5 different altitudes and the Equator, while the right panels (b) correspond to the left panels but at
6 40°N latitude. In each panel, the left axis scale and black line denote tidal diurnal amplitudes (K),
7 while the right axis scale and red line show the diurnal phases (hr of maximum value).
8 The displayed trend values are obtained from a simple least squares straight line fit.

9 The larger variations generally reflect modulation of the tides by the quasi biennial oscillation
10 (QBO). This has been discussed in models (Mayr and Mengel, 2005) and other SABER data
11 (Forbes et al., 2008).

12 Although the figures may give additional insight to the nature of the trends, there are caveats to
13 be considered. We note that the semidiurnal amplitudes and phases can also be significant. We
14 have derived a total of five Fourier components, and our numerical results reflect all 5 Fourier
15 terms.

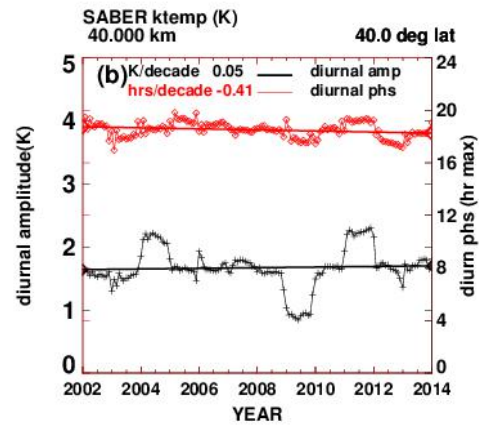
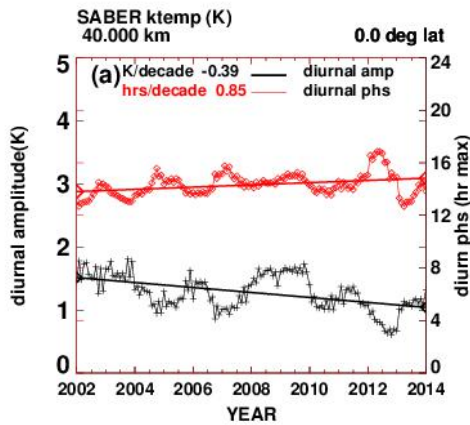
16 Because both amplitudes and phases exhibit trends, they need to be considered in parallel, in
17 tandem, and this is difficult to discern, qualitatively. In addition, because the trends are generally
18 small, it would be difficult to arrive at conclusions.

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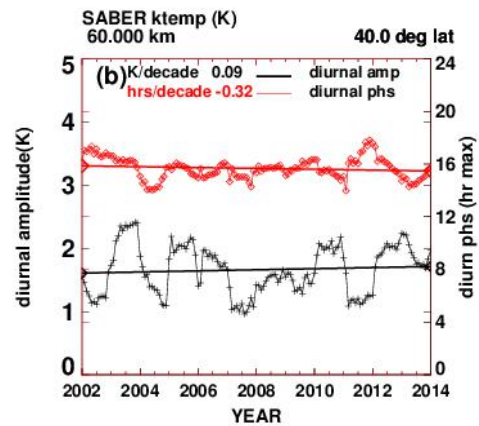
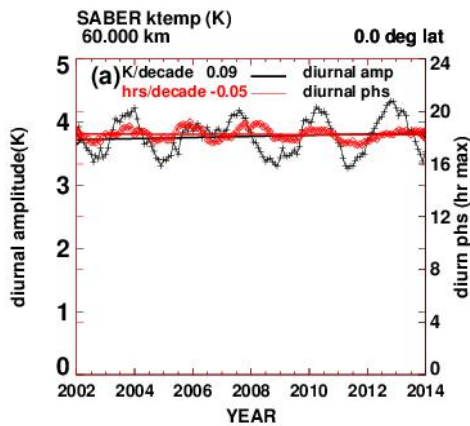


20 **Figure A1.** Left panel (a): Temperature tidal diurnal amplitudes and phases at 20 km, equator; left axis scale: black
21 line: tidal diurnal amplitude (K); right axis scale: red line: diurnal phase (hr of maximum value). Right panel (b): as
22 in left panel but at 40°N latitude.

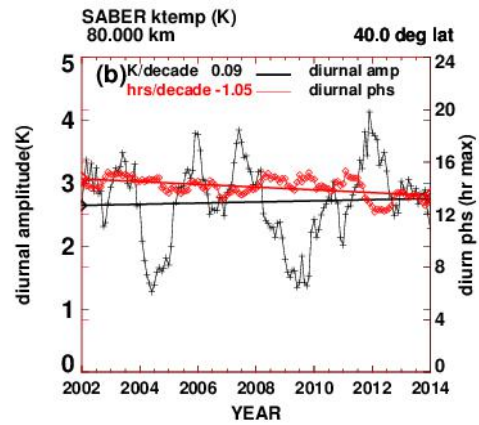
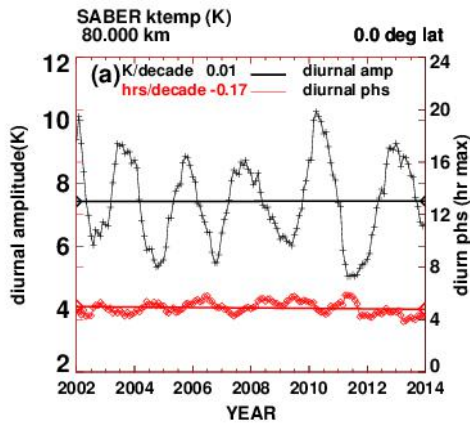
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 27 **Figure A2.** Left panel (a): Temperature tidal diurnal amplitudes and phases at 40 km, equator; left axis scale: black
 28 line: tidal diurnal amplitude (K); right axis scale: red line: diurnal phase (hr of maximum value). Right panel (b):
 29 in left panel but at 40°N latitude.
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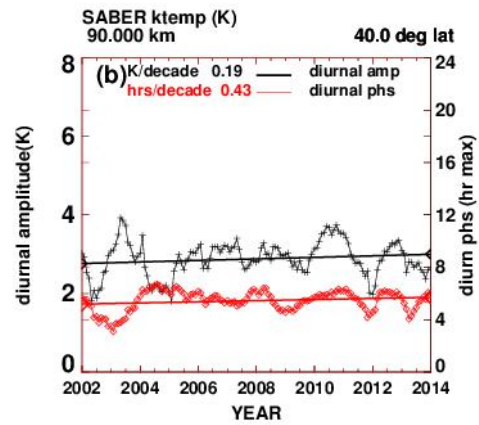
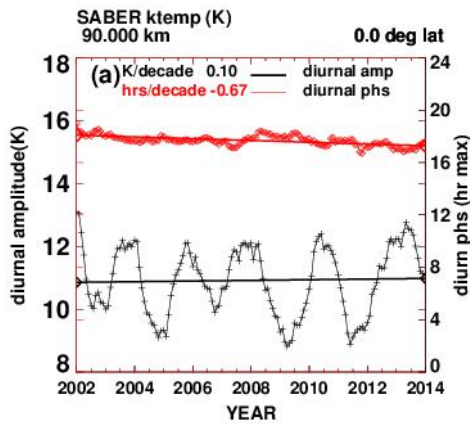


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 32 **Figure A3.** Left panel (a): Temperature tidal diurnal amplitudes and phases at 60 km, equator; left axis scale: black
 33 line: tidal diurnal amplitude (K); right axis scale: red line: diurnal phase (hr of maximum value). Right panel (b): as
 34 in left panel but at 40°N latitude.
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Figure A4. Left panel (a): Temperature tidal diurnal amplitudes and phases at 80 km, equator; left axis scale: black line: tidal diurnal amplitude (K); right axis scale: red line: diurnal phase (hr of maximum value). Right panel (b): as in left panel but at 40°N latitude.



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Figure A5. Left panel (a): Temperature tidal diurnal amplitudes and phases at 90 km, equator; left axis scale: black line: tidal diurnal amplitude (K); right axis scale: red line: diurnal phase (hr of maximum value). Right panel (b): as in left panel but at 40°N latitude.