Supporting information for: Comparison of ICON/MIGHTI and TIMED/TIDI Neutral Wind Measurements in the Lower Thermosphere

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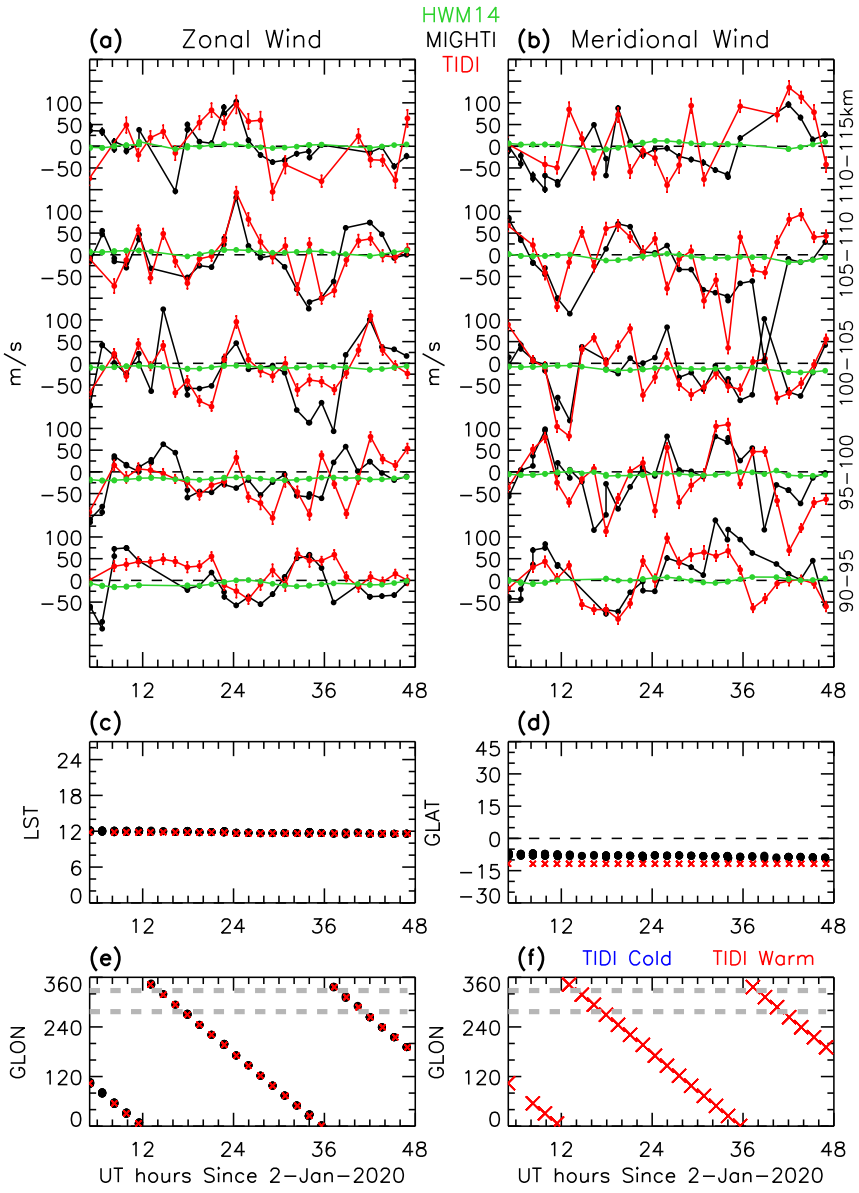

Figure S1. Comparisons between MIGHTI (black) and TIDI (red) wind components (zonal in panel (a) and meridional in panel (b)) for days 2 and 3 of 2020. The comparisons are shown as a function of UT at various 5 km wide altitude bins (shown on the right in the panel (b)). HWM14 winds (green) are also shown for reference. The variation in local solar time (LST), geographic latitude (GLAT), and geographic longitude (GLON) with universal time (UT) are shown in panels (c), (d), and (e), respectively. The panel (f) indicate which TIDI telescopes (warmside or coldside) measured the shown winds in panels (a) and (b). These measurements are from dayside around equatorial latitudes and from TIDI warmside telescopes. The longitudes between two grey horizontal dashed lines (in longitude subplot) corresponds to the South Atlantic Anomaly (SAA).

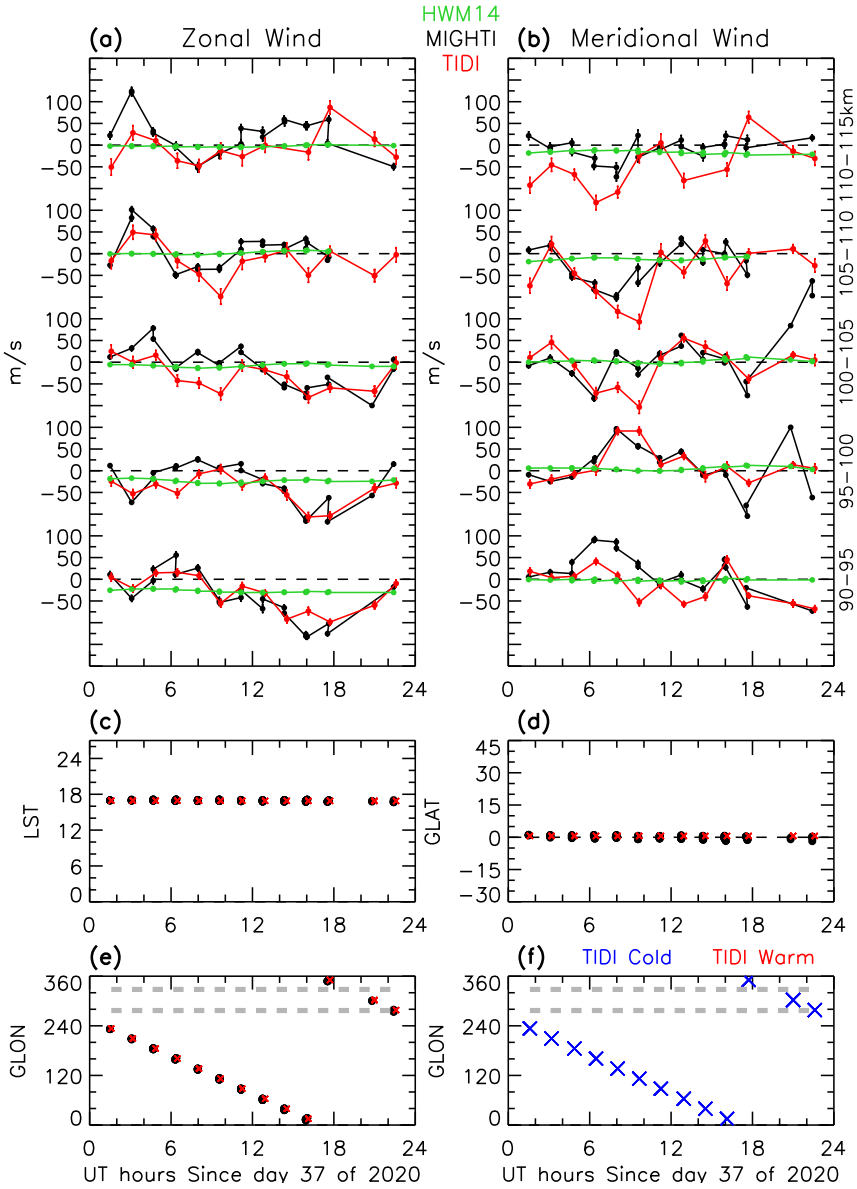

Figure S2. Same as Figure S1, but comparisons here are for day 37 of 2020 and TIDI measurements are from coldside.

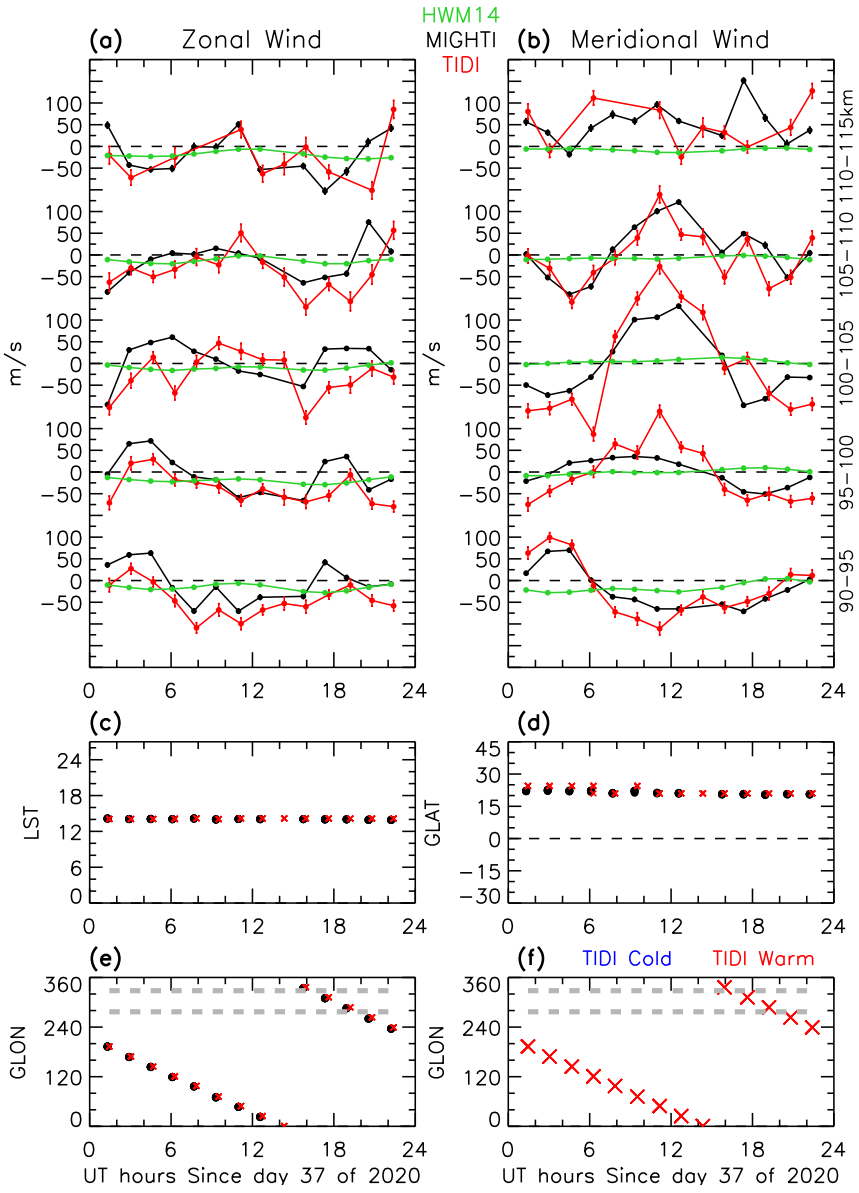

Figure S3. Same as Figure S2, but TIDI measurements are from warmside.

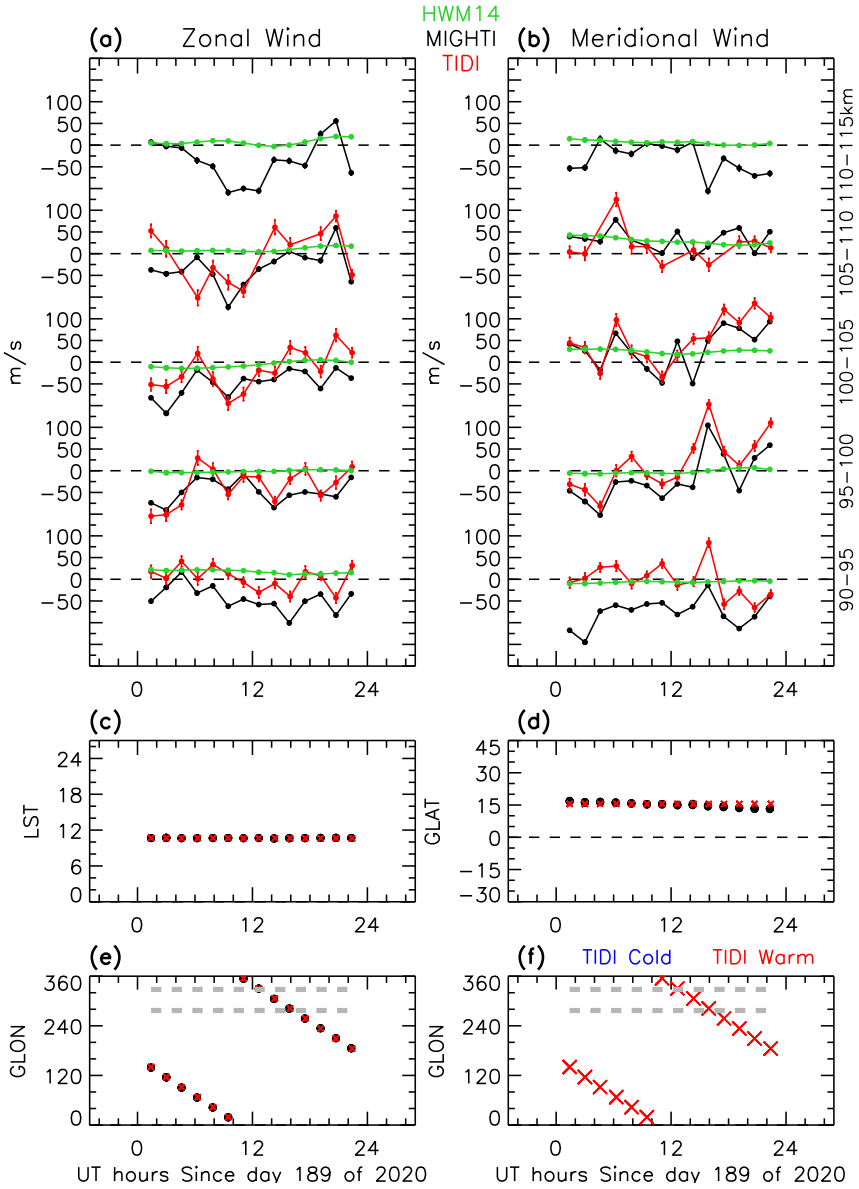

Figure S4. MIGHTI and TIDI wind comparison on day 189 of 2020. TIDI measurements are from warmside.

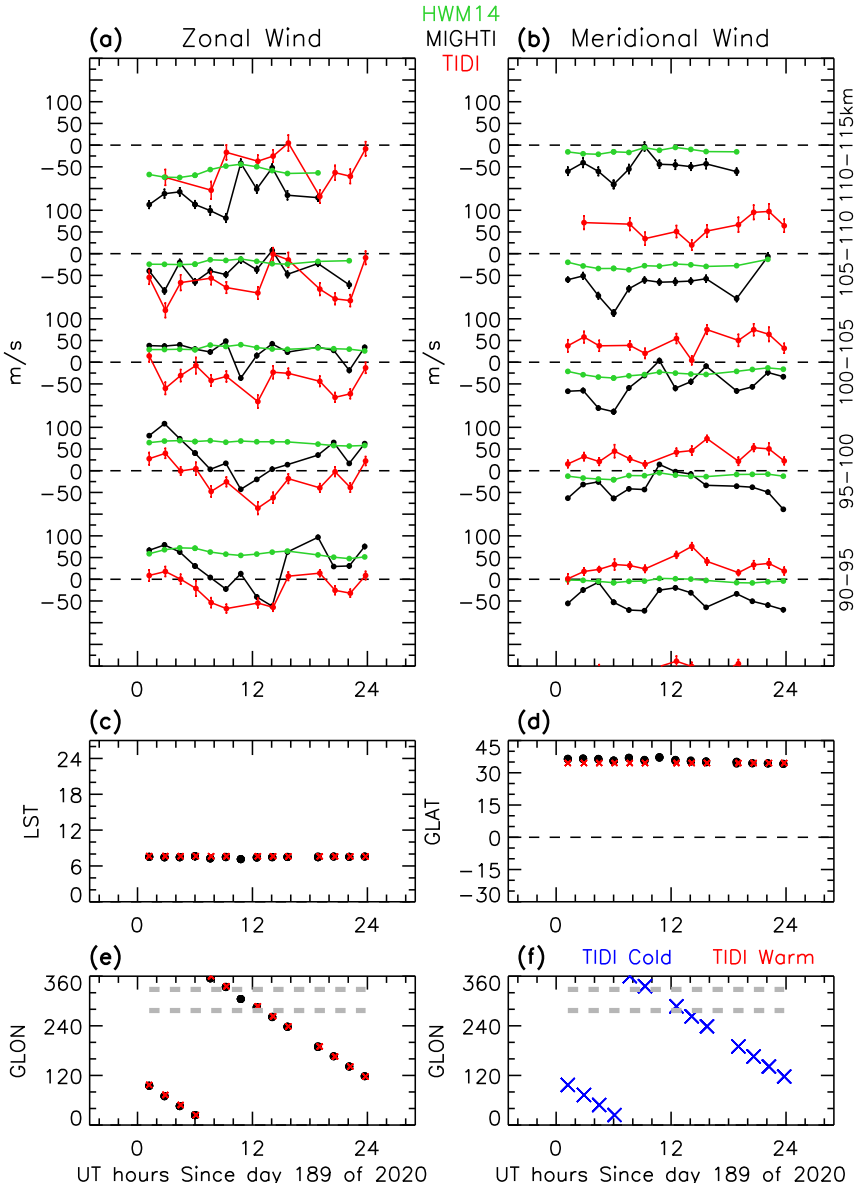

Figure S5. Same as Figure S4, but at a different local time and latitude. In addition, TIDI measurements are from coldside.

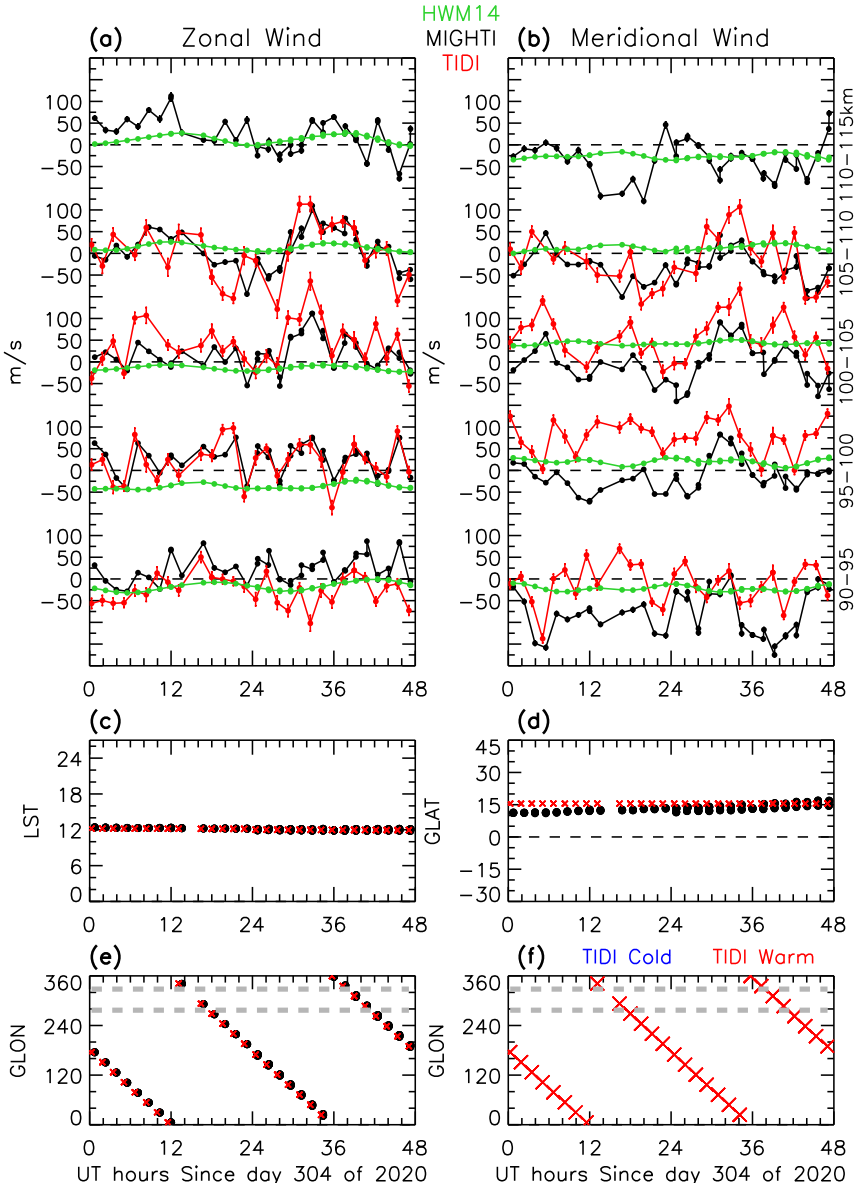

Figure S6. MIGHTI and TIDI wind comparison on days 304 and 305 of 2020. The conjunctions occurred on dayside and low latitudes. TIDI measurements are from warmside.

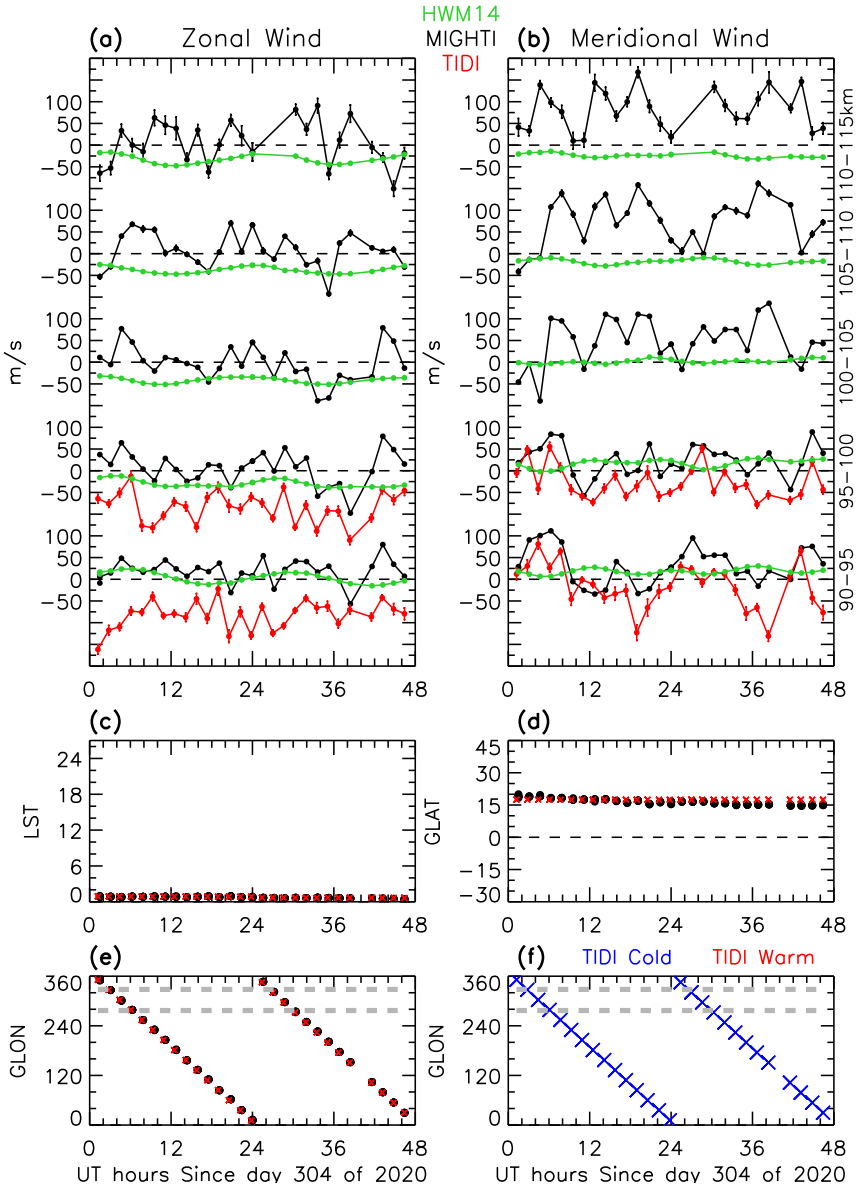

Figure S7. Same as Figure S6, but conjunction are from nightside and TIDI measurements are from coldside.

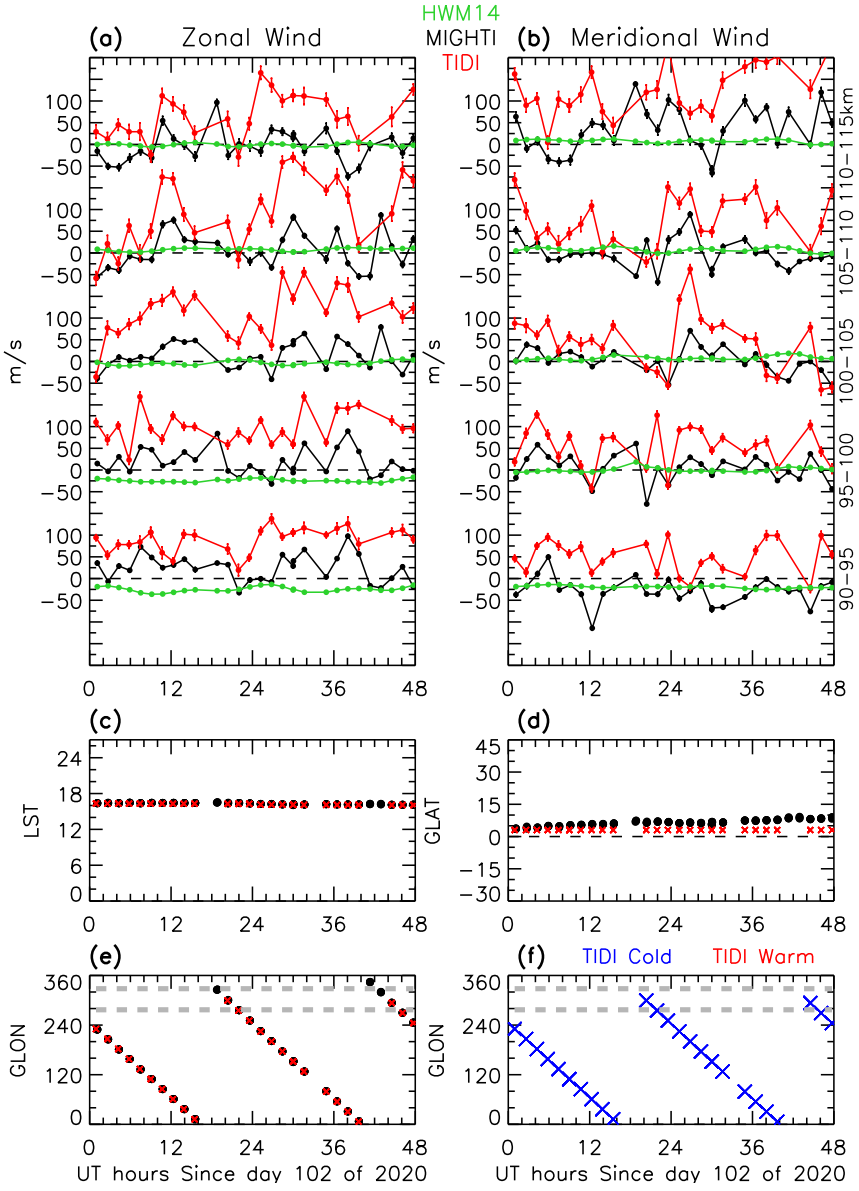

Figure S8. MIGHTI and TIDI comparison on days 102 and 103 of 2020.

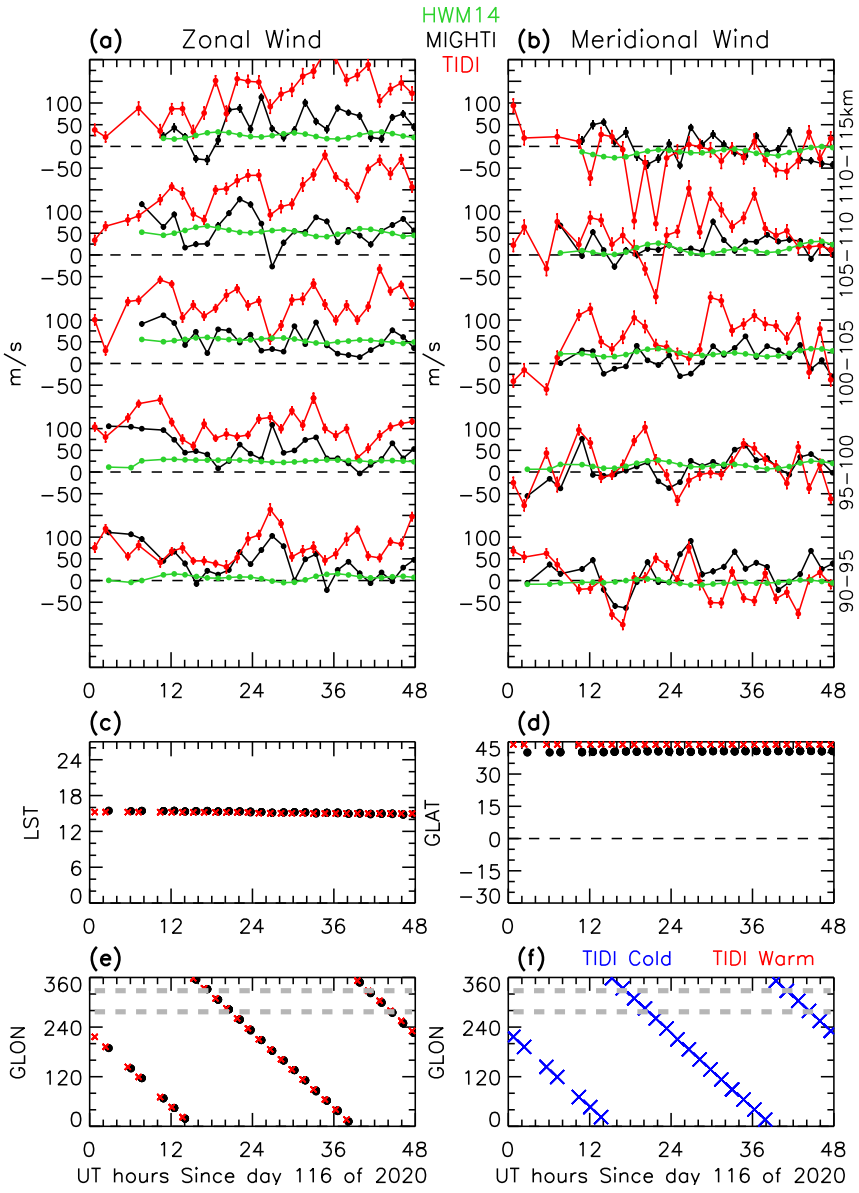

Figure S9. MIGHTI and TIDI comparison on days 116 and 117 of 2020.

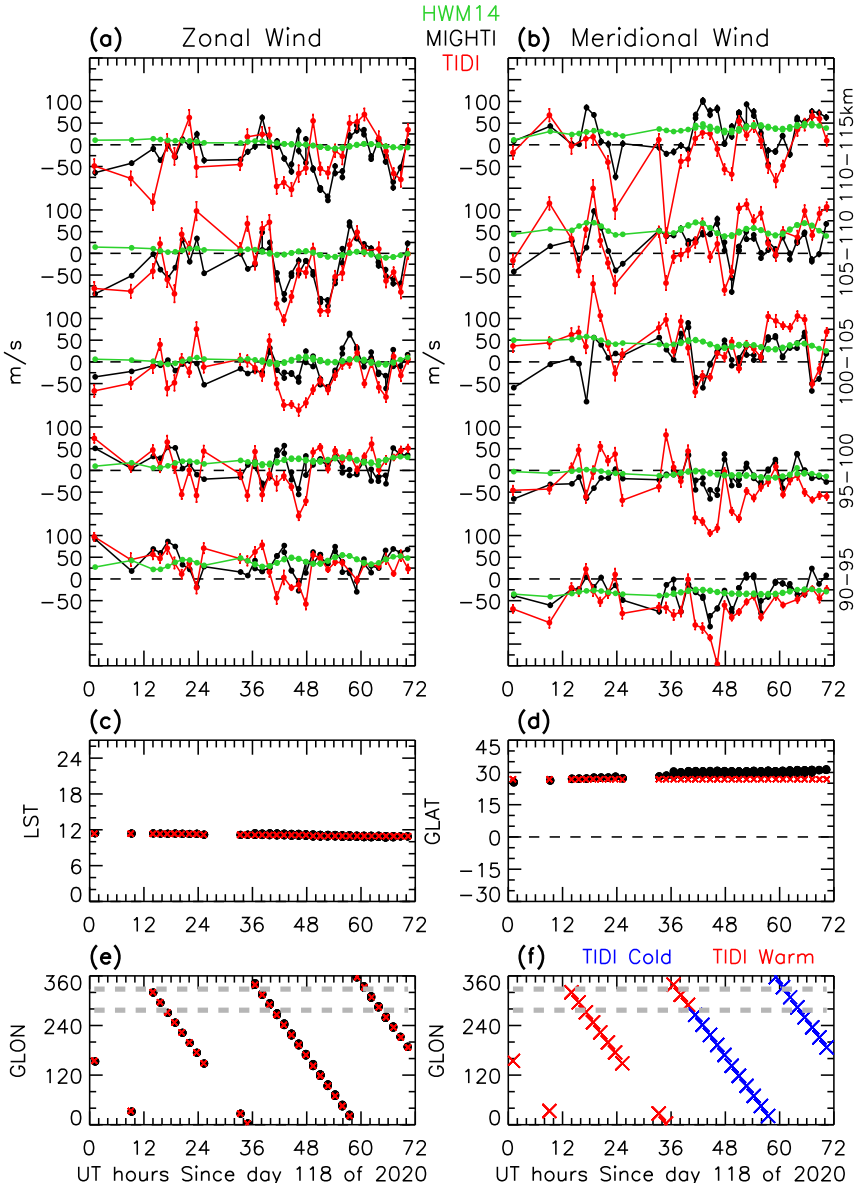

Figure S10. Same as Figure 7 of the main text, but at a different latitude and local time and transition going from warmside to coldside.

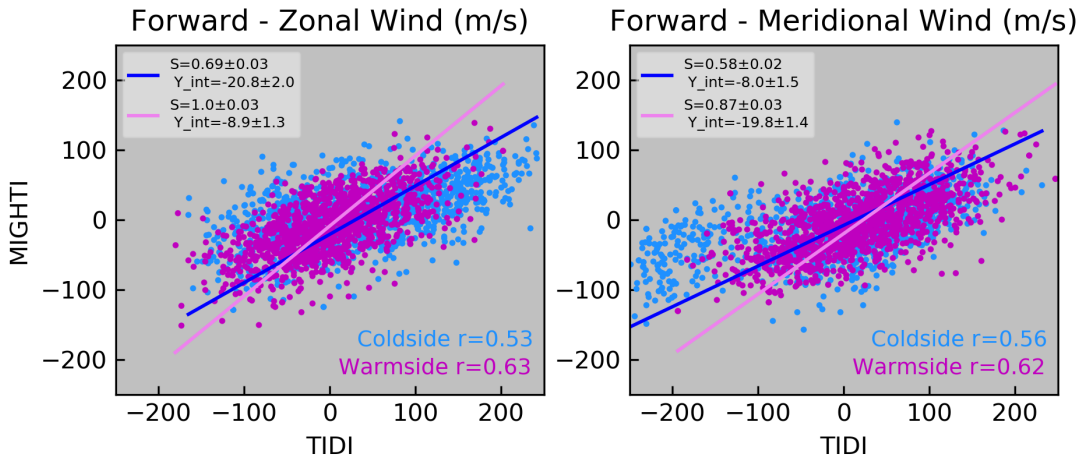

Figure S11. Comparison of MIGHTI and TIDI zonal winds (left column) and meridional winds (right column) at conjunctions between 95 and 110 km. Winds at conjunctions only when TIDI is flying in forward configuration are included. The measurements from coldside and warmside telescopes are shown separately. Each panel show slopes (S) and intercepts (Y-int) obtained with orthogonal distance regression with involving wind errors in the fitting process. The correlation coefficient is also shown on the bottom of each panel. The color label descriptions are given in each panel.