Observational and theoretical studies of tide-planetary wave interaction in the middle atmosphere

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Linkages between planetary wave (PW) events, ionospheric variations, and tides have been presented in a number of theoretical and observational studies. Although PWs are primarily midlatitude solstice phenomena, coupling with the tides can generate vertically propagating waves with a global extent that imprint PW variability upon the opposite hemisphere, the lower thermosphere, and the ionospheric dynamo. We present observational evidence for tide-PW interaction in a prototype high-altitude forecast-assimilation system. We also report results of numerical experiments with primitive equation models that elucidate the relationship between the forcing and response of the secondary waves arising from the interactions. abstract file should be named as the name of corresponding author in capital letters.

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