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**Study of Infrasound Propagation from the Shuttle Atlantis using a
large Seismic Network**

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Inclement weather in Florida forced the shuttle Atlantis to land at Edwards Air Force base in southern California on June 22, 2007, passing near three infrasound stations and several hundred seismic stations in northern Mexico, southern California and Nevada. The high signal-to-noise ratio, broad receiver coverage, and Atlantis' positional information allowed us to test our ability to model infrasound propagation through the atmosphere to regional distances. We predicted shadow zones and arrival times using rays launched at right angles to the conical shock front surrounding the shuttle, and traced through a standard atmospheric model, as well as a global G2S model. Comparison of predictions vs. observations shows agreement over much of the study area for both atmospheric specifications. To the east of the shuttle trajectory, there were no detections beyond the primary acoustic carpet. Infrasound energy was detected hundreds of kilometers to the west and northwest of the shuttle trajectory, consistent with the predictions of ducting due to the westward summer-time stratospheric jet. Both atmospheric models predict regions of ensonification alternating with shadow zones to the northwest. However, infrasound energy was detected tens of kilometers beyond predicted zones of ensonification, possibly due to uncertainties in stratospheric wind speeds.