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First observations of sprites in the eastern Mediterranean using the Israeli infrasound network

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As outlined by Farges et al (2005) as part of the Sprite2003 campaign in Europe, sprites at close range (less than a few hundred km) exhibit a unique signal in infrasound. This signal consists of an "inverted chirp," lasting up to several minutes and in which the higher frequencies arrive prior to the lower frequencies. The ILAN (Imaging of Lightning and Nocturnal Flashes) science team at Tel Aviv University maintains a database of optically observed sprites occurring within a few hundred kilometers of the Mediterranean coast of Israel. Using the observed azimuths of these sprites' locations with respect to the detectors, combined with an acoustic propagation model and the observed delays associated with propagation of the signals between the sprites and the infrasound arrays, we present here observations of several sprites that are consistent with the observations made by Farges et al. These constitute the first observations of sprites made using the Israeli infrasound network.