

Movie S 1. Animation of global Lamb wave propagation (A1 and A2 arrivals) as recorded by ground- and space-based instruments.

Microbarometers (inverted triangles) are colored by individually-normalized pressure waveform amplitude (filtered 1,000–10,000 s). Himiwari-8 satellite-derived brightness temperature perturbations (lowpass filtered) form the background image and have the same colormap as the pressure amplitudes. Satellite image sample interval is 10 min; pressure signal sample interval is 5 min (downsampled from 1 s).

Movie S 2 – Movie S 6. Tropospheric brightness temperature differences as a function of time.

Movie S 2. Hiwamari8, Oceania view.

Movie S 3. GOES17, East Pacific view.

Movie S 4. GOES16, South America view.

Movie S 5. Meteosat 8, Indian Ocean view

Movie S 6. Meteosat 11, Africa (antipode) view.

Movie S 7. Infrasound propagation.

Propagation of infrasound from the Hunga eruption computed via a spherical-geometry ray-tracing method. Blue points in the simulation represent the locations where propagation paths intercept the ground surface. Each frame of the animation shows the arrivals within 10 minutes of the specified time.