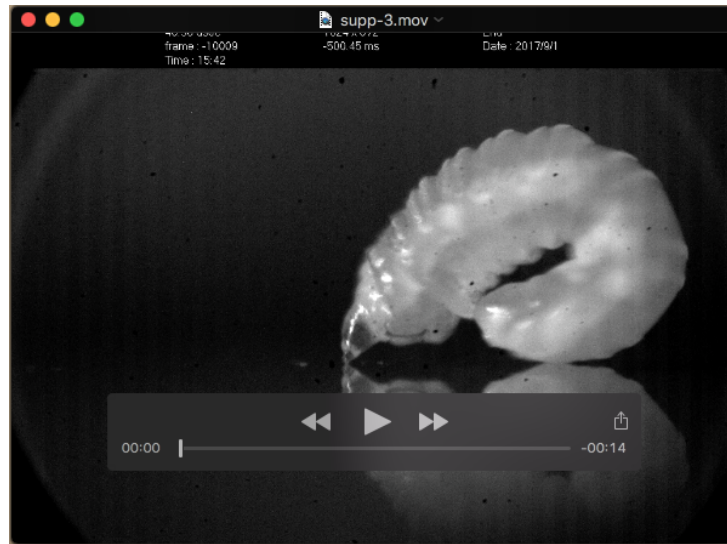


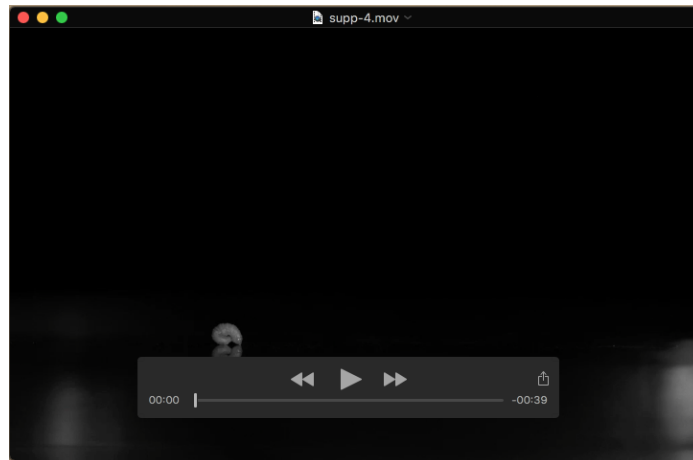
## Supplementary Material



**Movie 1. Jump preparation consists of two phases: loop formation and loop compression.** The larva plants one end of its body, slides the other end towards the first, and forms a circular loop held together by a latch mechanism. The larva begins hydrostatically pressurizing its body, compressing the loop, and forming a hinge at the posterior third of its body. Filmed at 200 fps, played back at 20 fps.



Movie 2. **The larva holds itself in a loop using a latch mechanism and is launched into the air when the latch is released.** The sternal spatula is not involved in the latch mechanism, as it is visible as a dark line below the head segment and anterior to the latch. Filmed at 20,000 fps, playback at 20 fps.



**Movie 3. After the latch releases, the larva is launched into the air and rotates as it follows a ballistic trajectory.** Filmed at 20,000 fps, playback at 90 fps.