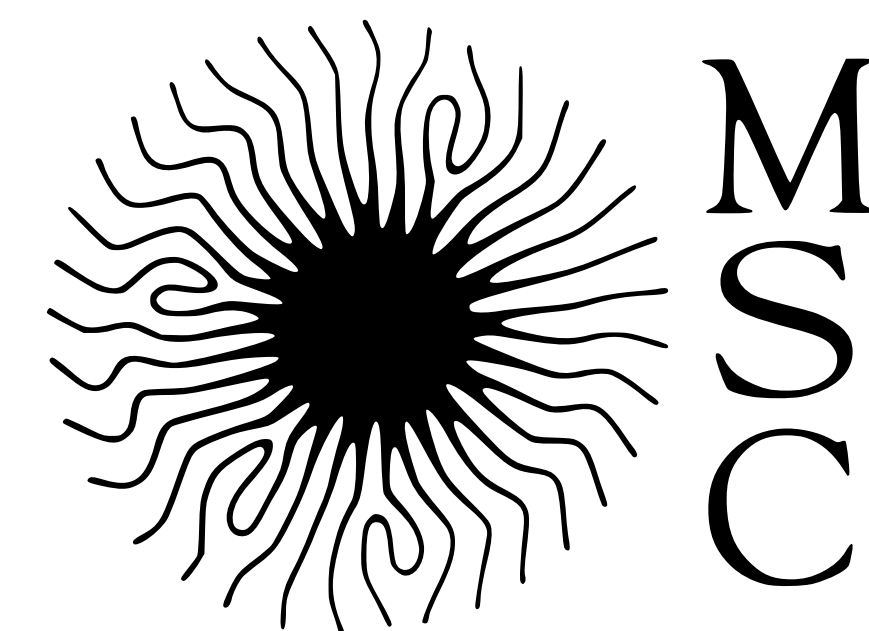
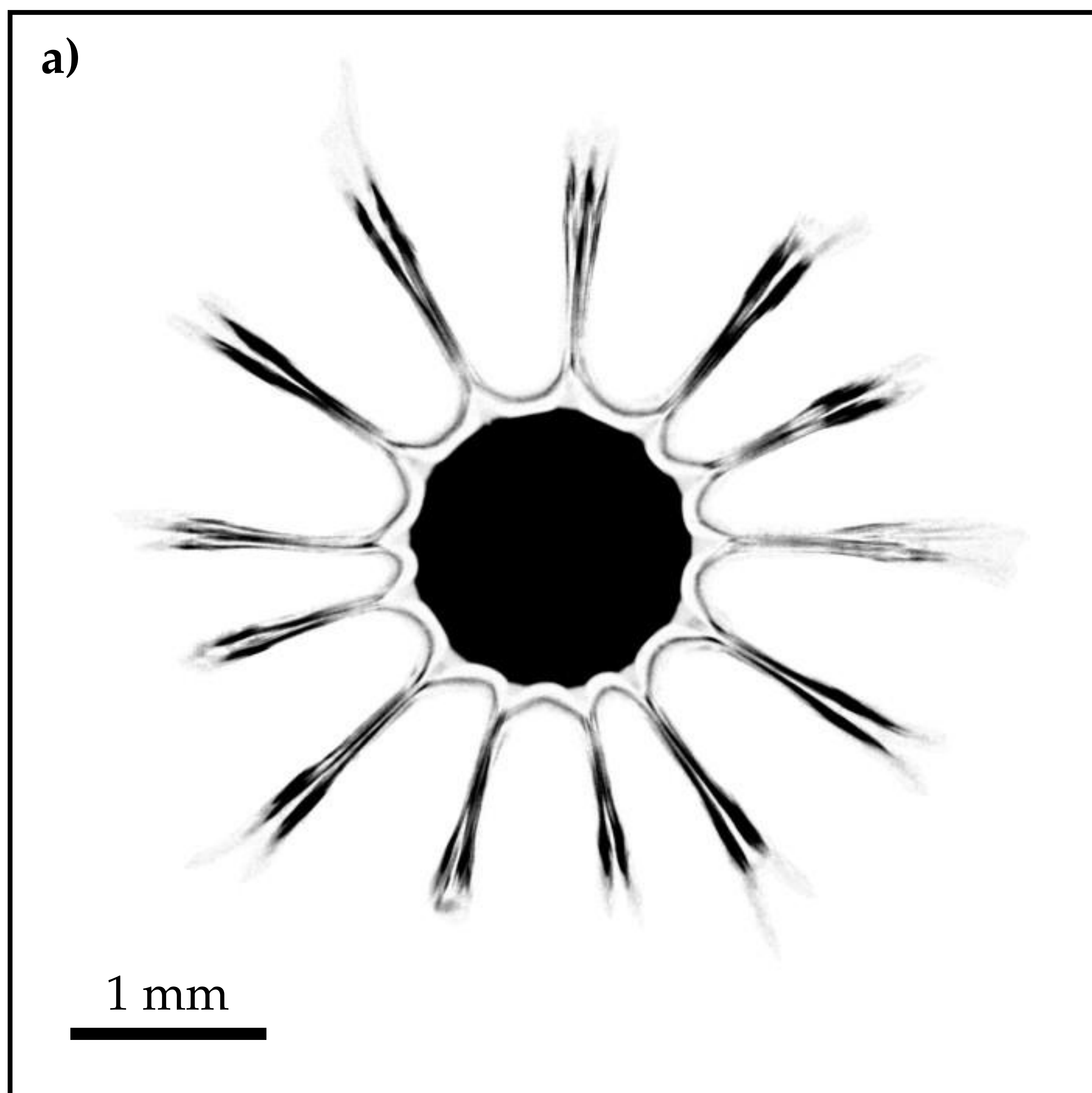


WEBBED JETS



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High velocity viscoelastic jet impacting on a wall at right angle. On impact, the symmetry breaks: steady radial liquid films, or 'wings', form around the jet. The wings result from elastic stresses that develop in the nozzle and destabilize the curved interface at the foot of the jet. Their number n increases with increasing jet velocity and viscoelastic relaxation time of the liquid, and decreasing nozzle-to-plate distance.

Main image: side view of a jet with $n = 5$ (2 wings are hidden). **a)** Bottom view, through a transparent plate, for $n = 13$. **b)** Hydraulic jump that forms downstream, on a large plate, for $n = 6$. **c)** Savart sheet that forms when the plate has a radius comparable with that of the jet, for $n = 4$. (The liquid is a solution of long unbranched polymers, polyethylene oxide $4 \cdot 10^6$ g/mol, at 2 g/L in water. The jet velocity is typically 10 m/s).

