

Abstract Submitted
for the DFD06 Meeting of
The American Physical Society

Liquid transport & jetting via light-scattering ROBERT SCHROLL,
Physics Department and the James Franck Institute, the University of Chicago,
RÉGIS WUNENBURGER, Centre de Physique Moléculaire Optique et Hertzienne,
Université Bordeaux I, WENDY ZHANG, Physics Department and the James
Franck Institute, the University of Chicago, JEAN-PIERRE DELVILLE, Centre
de Physique Moléculaire Optique et Hertzienne, Université Bordeaux I — Previous
works have shown that light scattering by inhomogeneities in the index of refraction
of a fluid can drive a large-scale flow. Here we investigate how the interaction of
this large-scale flow with radiation pressure across an interface in a phase-separated
liquid near a second-order phase transition can create a thin, stable jet. Estimates
of the volume flux of liquid transported by light-scattering inside the jet agree with
experimental measurements.

Robert Schroll
Physics Department and the James Franck Institute,
The University of Chicago

Date submitted: 03 Aug 2006

Electronic form version 1.4