

Abstract Submitted  
for the DPP07 Meeting of  
The American Physical Society

**Fabrication of Embedded Spheres in Resorcinol Formaldehyde Aerogel for Astrophysical Jet Experiments on OMEGA**<sup>1</sup> R.R. PAGUIO, J.F. HUND, B.E. BLUE, D.G. SCHROEN, K.M. SAITO, C.A. FREDERICK, R.J. STRAUSSER, General Atomics, K. QUAN, University California-San Diego — Embedded sapphire spheres in a cylindrical resorcinol formaldehyde aerogel targets are required for astrophysical jet studies on OMEGA. Previous work done on fabricating such a target used a 100  $\mu\text{m}$  thick stalk in order to place the ball in the required position. Recent experiments required the stalk to be 1  $\mu\text{m}$  or less, and changed the aerogel density from 100 mg/cc to 300 mg/cc. Targets were successfully fabricated without a supporting stalk by modifying parameters such as gelation time of the aerogel precursor solution, and use of a vacuum holder for the sphere placement. Fabrication of this target was also developed using a spider silk support approximately 100 times thinner than the earlier work on similar targets. Characterization of the ball placement and aerogel was done by radiography. These measurements showed that the ball was accurately placed and the aerogel matrix was not significantly altered.

<sup>1</sup>Supported by the US DOE under DE-AC52-06NA27279.

J.F. Hund  
General Atomics

Date submitted: 30 Aug 2007

Electronic form version 1.4