

1067-83-2211 **Alberto M Tegui***, 728 Glen Hollow Dr, Durham, NC 27705, and **Arlie Petters**. *Geometry of the Random Time Delay Surface and the Expected Number of Lensed Images in Microlensing*. Preliminary report.

We consider a gravitational lensing scenario where the lens is a collection of random stars. We study the resulting random shear tensor, obtaining its asymptotic probability density function in the large number of stars limit. This gives information on the geometry of the random time delay surface through a relation between the shear tensor and the Gauss curvature of the surface. We then use these results to obtain the first moment of an important physical observable: The random number of minimum images produced by the lensing scenario under consideration. (Received September 22, 2010)