



# A CHARA Array Survey of the Circumstellar Environments of Rapidly Rotating Be Stars: An Observational and Modeling Study using Interferometry and Spectroscopy

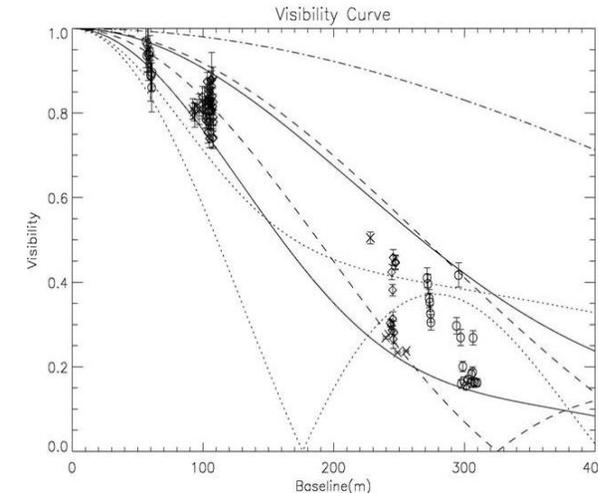
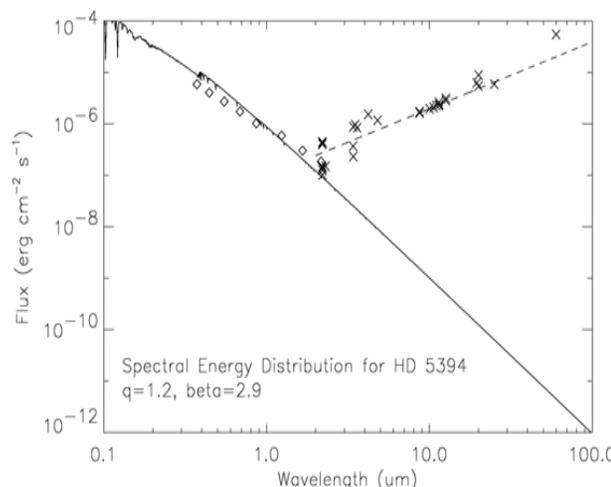
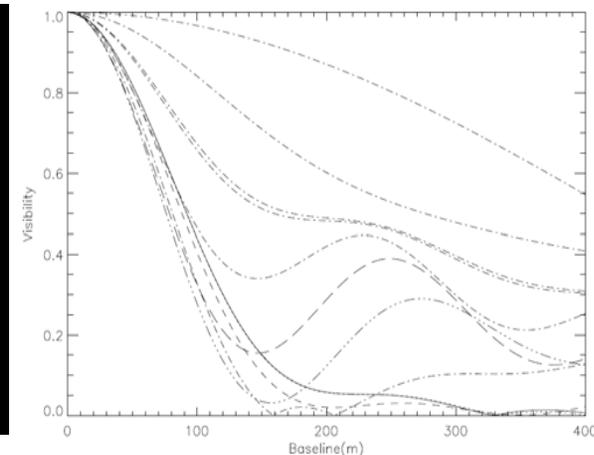
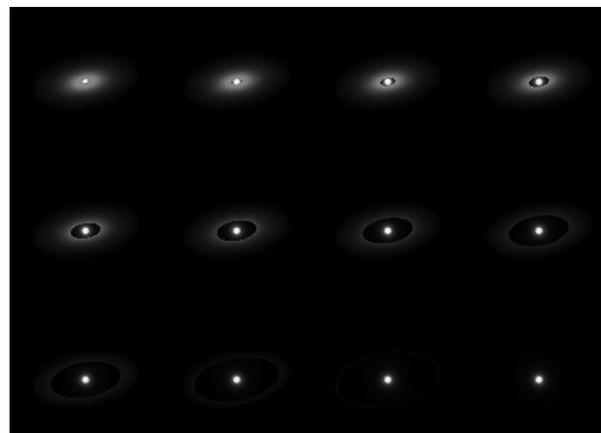


We present our approach in studying and determining the physical and geometrical properties of the circumstellar disks around Be stars. We have developed a physical model that generates infrared synthetic images, and we use observational results on several Be stars obtained with the long baseline CHARA Array interferometer to constrain its parameters.

The model assumes density and temperature profiles as described in the equations below:

$$\begin{cases} \rho(r, z) = 0, & r < r_0 \\ \rho(r, z) = \rho_0 (r/r_0)^{-n} \exp(-1/2(z/H)^2), & r > r_0 \\ T(r) = T_0 (r/r_0)^{-q} \end{cases}$$

This analysis is applied on each of the 25 Be stars in our survey, and first results about their disks properties will be published in the near future.



We show in figure 1 and 2 infrared synthetic images of a Be star with different values for its disk inner radius and their corresponding visibility curves. Figure 3 and 4 show the IR flux excess and visibility measurements in the case of the Be star Gamma Cassiopeia.