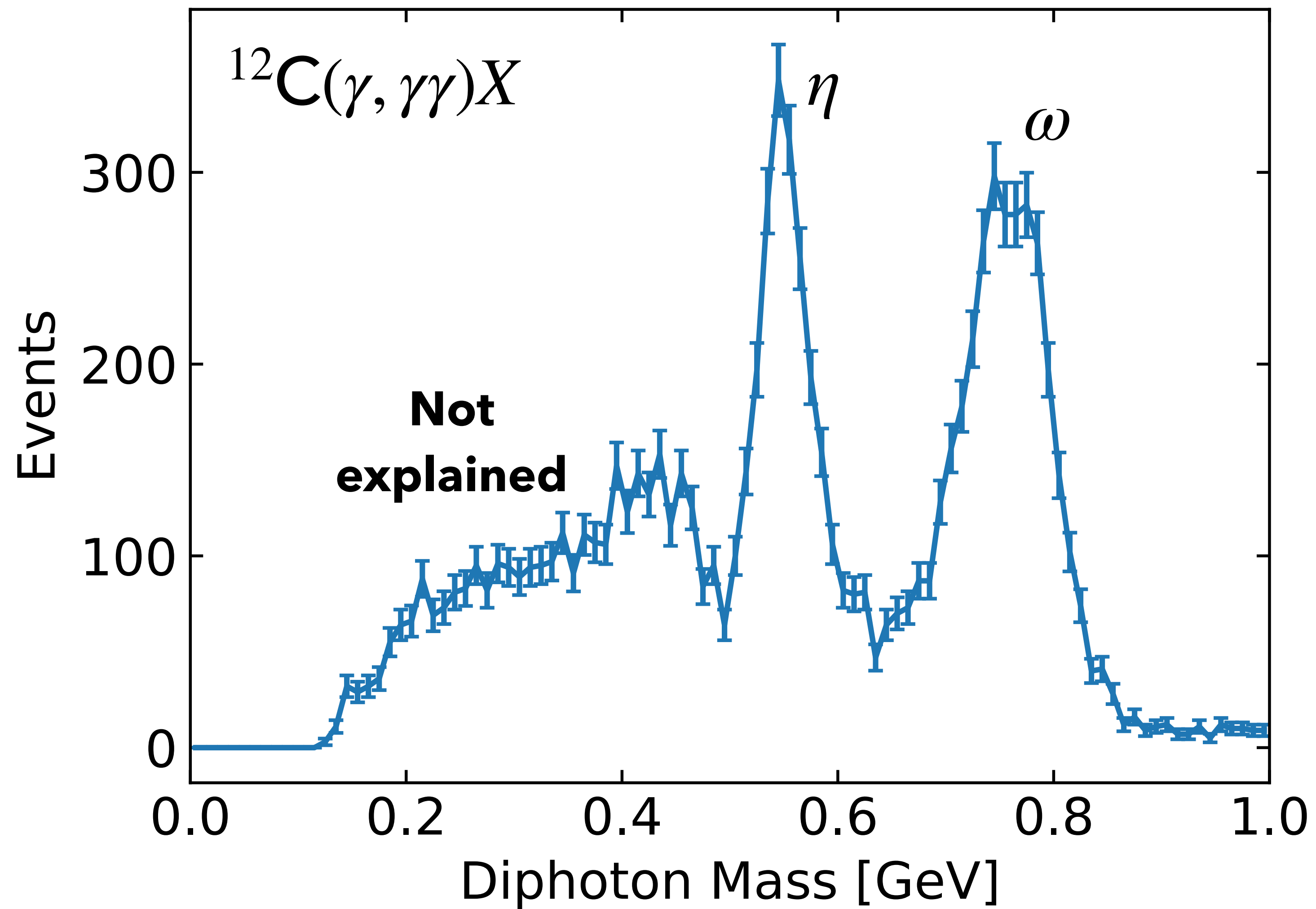


Low-Mass Diphoton Background



Background $^{12}\text{C}(\gamma, \gamma\gamma)X$ Events

- Does scattering from air downstream of target explain low-mass background?
- $(\gamma A \rightarrow \eta X)$ events from downstream have smaller measured opening angle \rightarrow smaller reconstructed mass: $m_{\gamma\gamma}^2 = E_1 E_2 (1 - \cos \theta_{12})$
- Compare rates of η production from target and air:
 - Effective surface density of Carbon target: **3.4 g/cm²**
 - Effective surface density of STP air from 85 cm to 600 cm: **0.7 g/cm²**

Shape of background not fully explained by Primakoff η production

