
V404 Cyg High-Energy Gamma-ray emission detected with Fermi-LAT

Alan Loh^{*1}

¹Laboratoire d'études spatiales et d'instrumentation en astrophysique (LESIA) – Observatoire de Paris,
Observatoire de Paris – France

Abstract

After 26 years of quiescence, the accreting black hole low-mass X-ray binary V404 Cygni underwent an exceptional outburst in 2015 June-July. Intense emission has been detected at all wavelengths, from radio to soft gamma rays (< 1 MeV) while evidence of electron-positron annihilations were brought out thanks to INTEGRAL observations. Until then, high energy gamma-ray emission from X-ray binaries, as probed by the Large Area Telescope (LAT) on board Fermi satellite, has only been successfully associated with high-mass systems such as Cyg X-3 and possibly Cyg X-1. We seized the opportunity to study V404 Cyg's outburst with Fermi-LAT which led to the first high-energy gamma-ray detection of a low-mass X-ray binary. The ~ 4 -sigma detection is strengthened by its temporal association with the peak of the outburst close in time with a major radio ejection, and also by consistent results from the AGILE team.

Keywords: x, ray binary, V404 Cygni, gamma rays

*Speaker