The X-Ray Universe 2011, Berlin, Germany, 27 – 30 June 2011

Poster E11

Overview of the field observed with XMM-Newton

The XMM-Newton dataset: Obs. ID 460570201, P.H{"u}hnerhofer, 16.8 sec.
Data processing with SAS 10.0 standard flare filter. pattern filtering, vignetting correction with weight spectral fitting with xspec: 12. Details of the analysis are presented in [14].

A non-thermal component from G8.7-0.1 could not be identified. If present, it would in the current analysis not be distinguishable from the intra-cluster component.

Further analysis depends on improvements of the background model and is under investigation.

The middle-aged supernova remnant G8.7-0.1

Fig. 2: Sky map with possible counterparts to the TeV source HESS J1804-216 (Gaia coordinates).
The right panel shows the X-ray source positions (upper gray), optical and radio positions (MSSS survey) (lower gray) and Galactic coordinates (black). Left panel: Radial profile (MOS1) of the source (black), fitted with a non-equilibrium thermal plasma model (red). Source fit with nei model: Temperature (kT) = 6.3 keV, ionization time scale (t_i) = 3.6×10^{16} years, density (N_{H}) = 1.3×10^{22} cm^{-2}.

The TeV source HESSJ1804-216 and its counterparts

The association of G8.7-0.1 with PSR J1806-2125 is a background source (D ~ 10 kpc) [9]. The very large absorption column of all three background components is allowed to vary independently.

The background model comprises three components:

• Instrumental background was subtracted by properly scaled closed filter wheel data, but the source extension and energy spectrum could not be distinguished from the background.

• The source is fit with a non-equilibrium thermal plasma model (nei) since 2 kpc away from the TeV source.

• The source spectrum, chosen to maximize the posterior probability of the source spectrum (from an extraction region with radius 60") is compatible with a power law (a = -1.3 essentially describes the power law index are typical for pulsar wind nebulae, therefore the source is classified as X-ray pulsar wind nebula candidate. Also evident is strong straylight contamination across large portions of the field of view (FoV), caused by the persistent LMXB Sgr X-1.

The X-ray emission extends from a few kpc around Sgr X-1 fills nearly the entire FoV of all three background components is allowed to vary independently.

The background model comprises three components:

• The extension of soft thermal emission from G8.7-0.1 to the North of G8.7-0.1 fills nearly the entire FoV of all three background components is allowed to vary independently.

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