

High resolution Imaging of possible microquasars

M. Pandey^{*†}

CNRS FRE 2591/CEA Saclay, DSM/DAPNIA/SAP, F-91191 Gif sur Yvette Cedex, France
E-mail: mamtapan@gmail.com

Z. Paragi

JIVE, MTA Research Group for Physical Geodesy and Geodynamics, Dwingeloo, Netherlands
E-mail: zparagi@jive.nl

P. Durouchoux

ESIEA-DRDI, 72 avenue Maurice Thorez, 94200, Ivry-sur-Seine, France
E-mail: pdurouchoux@hotmail.com

H. Bignall

JIVE, Dwingeloo, Netherlands
E-mail: bignall@jive.nl

We report high resolution e-VLBI observations on two possible microquasars IGR J17303–0601 and IGR J18406–0539 with the European VLBI Network (EVN) at 5 GHz in December 2006 and September 2007. These sources had candidate optical counterparts showing binary nature, and had radio counterparts in NVSS (1.4 GHz) or GMRT (0.610 GHz and 1.28 GHz) observations within the INTEGRAL position errors. Our goal was to detect emission on milliarcsecond scales to see whether they have associated compact core or core-jet structures as most microquasars do. We also wanted to verify, if the proposed NVSS/GMRT possible radio counter parts satisfy such morphology. e-VLBI observations allow us to achieve milliarcsec scale resolution and explore the detailed morphology of such sources. Radio maps of high quality can be quickly (within hours of observations) produced with the e-VLBI. 6 telescopes were involved for EVN observation at 5 GHz correlated in real time at the Joint Institute for VLBI in Europe (JIVE). We detect the NVSS radio source near IGR J17303–0601, which is marginally consistent with the ROSAT position of the source. However our accurate VLBI coordinates make it absolutely clear that the radio source is unrelated to the suggested optical counterpart of IGR J17303–0601. Thus, there is likely no association between the radio and the optical/X-ray sources. We do not detect the GMRT/NVSS source near IGR J18406–0539 on milliarcsecond scales. Our e-VLBI observations do not support the microquasar nature of these two INTEGRAL sources.

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*Speaker.

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