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MASTER optical observations of the blazar TXS0506+056 during the IC170922A

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MASTER Global Robotic Network of Lomonosov Moscow State University is the network of 8 robotic optical telescopes
located all over the world. One of their goals is the search for optical counterparts to short-
living transients such as GRB, gravitational waves and high-energy neutrinos. It is helped by
the fast reaction time of the telescopes on such alerts and their fast slewing. On September 22,
2017 the neutrino observatory IceCube detected a high-energy astrophysical neutrino
candidate that was connected to the flaring blazar TXS 0506+056, located in the neutrino
error-box. MASTER-Tavrida telescope started the observations of the error-box
73s after the trigger time and was able to detect the blazar minutes after the trigger. We present the earliest
astronomical observation of a high-energy neutrino error box of which the variability was discovered after
high-energy-neutrino detection. MASTER found the blazar TXS 0506+056 to be in the off-state after one
minute and then switched to the on-state no later than two hours after the event. The effect is observed at a
50σ significance level. We also present own a unique 16 yr light curve of blazar TXS 0506+056 (518 data set).

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