Sixteenth Marcel Grossmann Meeting



Contribution ID: 362

Type: Invited talk in the parallel session

Three Stage Collapse From Prompt Multiwavelength Observations of GRB160625B

Tuesday, 6 July 2021 09:50 (20 minutes)

We present the results of synchronous multiwave observations of the intrinsic gamma and optical radiation of the long GRB160625B gamma-ray burst by the MASTER Global Network, the Lomonosov Gamma-Observatory and the Konus-Wind gamma detector. We see traces of quasiperiodic optical pulsations of the intrinsic optical radiation on scales of several tens of seconds. We associate quasiperiodic pulsations with forced precession of a self-gravitating slowly collapsing object - a spinar. We also present the results of recording hard X-ray and gamma radiation, obtained by burst detectors on spacecraft. We propose a three-stage scenario for the collapse of the core of a massive star, which explains three characteristic phenomena - the X-ray precursor, the main peak of the gamma-ray burst, and the weak peak at the end of the active phase of the gamma-ray burst.

Primary author: Prof. LIPUNOV, Vladimir (Lomonosov Moscow State University, SAI, Physics Department)

Co-authors: Prof. SADOVNICHII, Victor Antonovich (Lomonosov Moscow State University); Prof. SVER-TILOV, Sergey (Lomonosov Moscow State University, Skobeltsyn Institute of Nuclear Physics (SINP MSU)); Dr SVINKIN, Dmitry (Ioffe Institute of theoretical physics); Dr YASHIN, Ivan (4 Lomonosov Moscow State University, Skobeltsyn Institute of Nuclear Physics (SINP MSU)); Dr SIMAKOV, Sergey (Lomonosov MSU, SAI); Dr FRED-ERIKS, Dmitry (Ioffe Institute of theoretical physics); Dr KORNILOV, Victor (Lomonosov Moscow State University, SAI); Prof. PANASYUK, Mikhail (Lomonosov Moscow State University, Skobeltsyn Institute of Nuclear Physics (SINP MSU)); Mr GORBOVSKOY, Ebgeny (Lomonosov Moscow State University, SAI); Dr TOPOLEV, Vladislav (Lomonosov Moscow State University, Physics Department); Dr LIPUNOVA, Galina (Lomonosov Moscow State University, SAI); Dr TIURINA, Nataly (Lomonosov Moscow State University, SAI); Dr ZHIRKOV, Kirill (Lomonosov Moscow State University, SAI, Physics Department); Mr CHASOVNIKOV, Aristarh (Lomonosov Moscow State University, SAI, Physics Department); Dr IYUDIN, Anatoly (Lomonosov Moscow State University, Skobeltsyn Institute of Nuclear Physics); Dr BOGOMOLOV, Andrey (Lomonosov Moscow State University, Skobeltsyn Institute of Nuclear Physics); Dr BOGOMOLOV, Vitaly (Lomonosov Moscow State University, Skobeltsyn Institute of Nuclear Physics (SINP MSU)); Prof. REBOLO, Rafael (Instituto de Astrofísica de Canarias); Dr SERRA-RICART, Miquel (Instituto de Astrofísica de Canarias, Lactea, E38205, LaLaguna, Tenerife, Spain); Mr GRESS, Oleg (Irkutsk State University); Prof. BUDNEV, Nikolay (Irkutsk State University); Mr GABOVICH, Alexander (Blagoveschensk State Pedagogical University); Ms ERSHOVA, Olga (Irkutsk State University)

Presenter: Prof. LIPUNOV, Vladimir (Lomonosov Moscow State University, SAI, Physics Department)

Session Classification: Multichannel Studies of Nonstationary Relativistic Stars

Track Classification: Binaries: Multichannel studies of nonstationary relativistic stars