
Supernovae and Gamma-Ray Bursts 2013

Oct. 14 – Nov. 15, 2013,

Oct. 28 – Nov. 1 : Conference on Supernovae

Nov. 11 – 15 : Conference on Gamma-Ray Bursts

Yukawa Institute for Theoretical Physics (YITP),

Kyoto University, Kyoto, Japan

<http://www2.yukawa.kyoto-u.ac.jp/ws/2013/sngrb/SN-GRB2013.html>

Registration is Open Now.

!!!! Please register NO LATER THAN 15th July 2013 when you need financial support.!!!!

!!!! Please register NO LATER THAN 1st August 2013 when you are willing to give a contributed talk.!!!!

Third Circular

It is our pleasure to announce that we are organizing a workshop on supernovae and gamma-ray bursts at YITP, Kyoto, Japan from Oct. 14 to Nov. 15, 2013.

The main aim of this workshop is to share the current knowledge and the future prospects for research on the explosion mechanism of core-collapse supernovae (CC-SNe) and gamma-ray bursts (GRBs). Numerical simulation is a promising approach for studying the explosion mechanism. Establishing the equation of state for dense matter is one crucial ingredient, as well as understanding the composition and neutrino

properties of dense matter. Observational confirmation of the explosion mechanism by MeV-neutrinos and gravitational waves is also very important. Furthermore, CC-SNe and GRBs are special phenomena in the universe where exotic physical conditions are realized. We would like to cover phenomena related to these events such as plasma physics and radiation processes in shocks of CC-SNe and GRBs and explosive nucleosynthesis. We hope that many researchers in these fields will participate in the workshop. To this end, we will provide the participants with excellent facilities at the Yukawa Institute for Theoretical Physics (YITP), where they will find it easy to have conversations and discussions with each other in a pleasant atmosphere. We will also organize two conferences about the state-of-the-art research in these fields where participants can present their latest results. In particular, the current status of numerical simulations performed on the fastest super-computer in Japan (K-computer), of the Japanese gravitational wave detector in Japan (KAGRA), the MeV-neutrino detector (Super-Kamiokande), and the next generation of X-ray satellite (Astro-H) will be reported at the conferences.

Main topics of the workshop are:

1. Explosion Mechanism of Core-Collapse Supernovae
2. Equation of State for High-Density Matter
3. Structure of Neutron Stars as Remnants of CC-SNe
4. Collapsars and Magnetars as Central Engine of Long Gamma-Ray Bursts
5. Merging Compact Binaries as Central Engine of Short Gamma-Ray Bursts
6. Neutrinos and Gravitational Waves as Signals of Death of Massive Stars
7. Progenitors of CC-SNe and GRBs
8. Multi-Wavelength Observations of SNe, GRBs, and their Remnants
9. Plasma Physics, Particle Acceleration, and Radiation Process in Shocks of SNe, GRBs, and their Remnants
10. UHECRs and VHE-Neutrinos and Gamma-Rays from GRBs
11. Explosive Nucleosynthesis in SNe and GRBs

The workshop will last 5 weeks in total, including two one-week conferences on SNe and GRBs respectively. More than 100 people are expected to participate in each conference (capacity of the conference hall at YITP is 120 people maximally).

The remaining 3 weeks are spent for workshops where participants can hear seminars in the morning and enjoy free discussions in the afternoon.

The capacity of the visitor facilities at YITP during the 3-week workshop is 50 maximally. The main scopes of the 3-week workshop are Nuclear Physics in CC-SNe and GRBs (Oct. 14–18), CC-SNe (Oct. 21–25), and GRBs (Nov. 4–8). Participants can choose their favorite dates to stay in Kyoto during the workshop.

We can offer some financial support (probably for local expenses including accommodation fee), although the budget is limited. We cannot guarantee that we can cover all of local expenses especially for participants who are planning a very long stay. Registration is open now.

Registration fee is 5,000 JPY and banquet fee is 5,000 JPY per person. The fees can be paid by cash on site (only JPY is accepted).

Invited or Keynote Speakers:

Supernova Conference:

G. Baym, J. Beacom, S. Blinnikov, A. Burrows, R. Chevalier, D. Ellison, T. Enoto, A. Heger, W. Hillebrandt, C. Horowitz, N. Kanda, K. Kotake, M. Krumholz, K. Langanke, J. Lattimer, G. McLaughlin, K. Maeda, A. Mezzacappa, B. Mueller, M. Nakahata, K. Nomoto, F. Oezel, D. Page, P. Slane, A. Steiner, H. Uchida, M. Was (TBC)

Gamma-Ray Burst Conference:

D. Allard, M. Aloy, A. Bauswein, A. Beloborodov, F. Daigne, M. Della Valle, N. Gehrels, Jens Hjorth (TBC), D. Lazzati, M. Limongi, A. MacFadyen, J. McEnery, P. Meszaros, B. Metzger, A. Mizuta, S. Nagataki, A. Pe'er, S. Rosswog, F. Ryde (TBC), Y. Sekiguchi, M. Shibata, A. Soderberg (TBC), R. Surman, S. Wanajo, D. Yonetoku, S. Yoon (TBC), B. Zhang

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Organized by: Yukawa Institute of Theoretical Physics, Kyoto University

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Yukawa International Program for Quark-Hadron Sciences (YIPQS)

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HPCI Strategic Program Field 5 "The origin of matter and the universe"

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