

# 第 47 回 RESCEU コロキウム



東京大学大学院理学系研究科 附属ビッグバン宇宙国際研究センター

日 時: 2021年2月18日(木) 14:00 ~ 15:00

場 所: オンライン (Zoom)

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## Recent X-ray Studies of Supernova Remnants and Beyond

### Abstract

X-ray observations of supernova remnants provide insight into particle acceleration at their expanding shocks, the mechanisms of the supernova explosions, nucleosynthesis in the explosions, and so on. I will talk about our recent results on Tycho's supernova remnant based on observational data obtained in 2000-2015 with the Chandra X-ray Observatory. Thanks to the superb angular resolution of Chandra, we discovered fine features of synchrotron X-rays showing variability in a short timescale of  $\sim$  yr. Such variability indicates that particle acceleration and synchrotron cooling of X-ray-emitting electrons proceed in the  $\sim$  yr timescale with a substantially amplified magnetic field. Chandra is a powerful tool also to measure the expansion rate of Tycho's supernova remnant with the highest precision ever. We found that the expansion was abruptly decelerated, which provides us with important clues about the progenitor system of the Type Ia supernova that created the remnant. In the last part of my talk, I will shortly talk about our detector development aiming for the future X-ray mission FORCE, which will achieve an unprecedented angular resolution in the hard X-ray band.

興味をお持ちの方の聴講を歓迎致します。