

Abstract Submitted  
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**The SuperTIGER-2 flight overview and its preliminary results**

MAKOTO SASAKI, NASA/GSFC/CRESST/UMCP, SUPERTIGER COLLABORATION — SuperTIGER (Super Trans-Iron Galactic Element Recorder) is a large-area instrument designed to make a precision measurement of the elemental composition of the ultra-heavy galactic cosmic rays (UHGCR) with atomic number  $Z \geq 30$ . After a record-breaking 55 day SuperTIGER-1 long-duration flight in the 2012/2013 Antarctic season, a second flight was planned for the 2017/2018 season. However, unfavorable weather conditions throughout the season prevented a launch despite 16 attempts, and the instrument ended up overwintering in the Long Duration Balloon (LDB) assembly building near McMurdo Station. In the 2018/2019 season, the balloon was launched on December 20, 2018, but it couldnt reach float altitude and the flight was terminated after 6 hours. The instrument was recovered in the same season, reassembled and tested prior to shipping north, the mechanical damage from landing was repaired, and the payload was integrated and sent back to Antarctica. Finally in the 2019/2020 season the balloon was launched on the first attempt, reached float altitude successfully, and started observing cosmic-ray events on December 16, 2019. We provide an overview of the SuperTIGER-2 flight and report on its preliminary results.

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