The second RHESSI TGF catalog

T. Gjesteland[1], N. Østgaard[1], R. Nisi[1], A. Collier[2] Gaopeng Lu[3], S. Cummer[4], D. Smith[5]

[1]*Birkeland Centre for Space Science, Department of Physics and Technology, University of Bergen, Norway*
[2]*Space Physics Research Institute, University of KwaZulu-Natal, Durban, South Africa,*
[3]*Key Laboratory of Middle Atmosphere and Global Environment Observation (LAGEO), Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing 100029, China,*
[4]*Duke University, Electrical and Computer Engineering, Durham, United States,*
[5]*Physics Department and Santa Cruz Institute for Particle Physics, University of California, Santa Cruz, California, USA.*

The Reuven Ramaty High Energy Solar Spectroscopic Imager (RHESSI) satellite has been observing TGFs from satellite orbit since 2002. Here we will present the second RHESSI catalog. This catalog consists of TGFs, identified by our search algorithm, from 2002 through 2013. This search has resulted in the largest collection of TGF events so far. Several of the TGFs are matched with the ground based VLF network World Wide Lightning Location Network (WWLLN) and DUKES VLF/ULF receivers.

1. Introduction

In 2005 Smith et al. [1] reported that RHESSI observed TGFs since it was launched in 2002. The first RHESSI catalog contains TGFs identified from 2002 through 2008 and is presented by Grefenstette et. al., 2009 [2]. The second RHESSI catalog, which we present here, contains approximate 3000 TGFs between 2002 and 2013.

2. The Catalog

Based on TGF properties from the first RHESSI catalog and other measurements we developed a new search algorithm that more than doubled the number of TGF identifications in the raw RHESSI data [3]. This catalog consists of TGFs, identified by our search algorithm. This search has resulted in the largest collection of TGF events so far**.** Several of the TGFs in our catalog are matched with ground based VLF network. We have used the algorithm from Collier et al [4] to find matches with the World Wide Lightning Location Network (WWLLN).

We have used the TGFs from our catalog and compared TGFs that occur within 5000 km from the DUKE receivers. The result is that the vast majority of our TGFs were matched with a DUKE sferic.

3. References

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