

SãoPaulo Lightning Mapping Array (SP-LMA): Deployment, Operation and Initial Data Analysis

R. J. Blakeslee^{1*}, J. C. Bailey², L. D. Carey², S. Rudlosky³, S. J. Goodman³, R. Albrecht⁴, C.A Morales⁵, E. M. Anseimo⁵, O. Pinto Jr⁶

¹NASA Marshall Space Flight Center, Huntsville, Alabama 35812, USA

²University of Alabama in Huntsville, Huntsville, Alabama 35899, USA

²University of Alabama in Huntsville, Huntsville, Alabama 35899, USA, e-mail larry.carey@nsstc.uah.edu

³NASA Marshall Space Flight Center, Huntsville, Alabama 35812, USA, e-mail rich.blakeslee@nasa.gov

⁴Instituto Nacional de Pesquisas Espaciais, Cachoeira Paulista, SP Brazil , e-mail rachel.albrecht@cptec.inpe.br

⁵Universidade de São Paulo, São Paulo, SP Brazil, e-mail morales@model.iag.usp.br

⁶Instituto Nacional de Pesquisas Espaciais, S. J. dos Campos, SP Brazil , e-mail osmar@dge.inpe.br

ABSTRACT: An 8-10 station Lightning Mapping Array (LMA) network is being deployed in the vicinity of São Paulo to create the SP-LMA for total lightning measurements in association with the international CHUVA [Cloud processes of *tHe* main precipitation systems in Brazil: A contribUtion to cloud resolVing modeling and to the GPM (GlobAl Precipitation Measurement)] field campaign. Besides supporting CHUVA science/mission objectives and the São Luiz do Paraitinga intensive operation period (IOP) in November-December 2011, the SP-LMA will support the generation of unique proxy data for the Geostationary Lightning Mapper (GLM) and Advanced Baseline Imager (ABI), both sensors on the NOAA Geostationary Operational Environmental Satellite-R (GOES-R), presently under development and scheduled for a 2015 launch. The proxy data will be used to develop and validate operational algorithms so that they will be ready for use on “day1” following the launch of GOES-R. A preliminary survey of potential sites in the vicinity of São Paulo was conducted in December 2009 and January 2010, followed up by a detailed survey in July 2010, with initial network deployment scheduled for October 2010. However, due to a delay in the São Luiz do Paraitinga IOP, the SP-LMA will now be installed in July 2011 and operated for one year. Spacing between stations is on the order of 15-30 km, with the network “diameter” being on the order of 30-40 km, which provides good 3-D lightning mapping 150 km from the network center. Optionally, 1-3 additional stations may be deployed in the vicinity of São José dos Campos.

*

Correspondence to:

Jeff Bailey, University of Alabama in Huntsville, 320 Sparkman Drive, Huntsville, Alabama 35805, USA email: jeffrey.c.bailey@nasa.gov