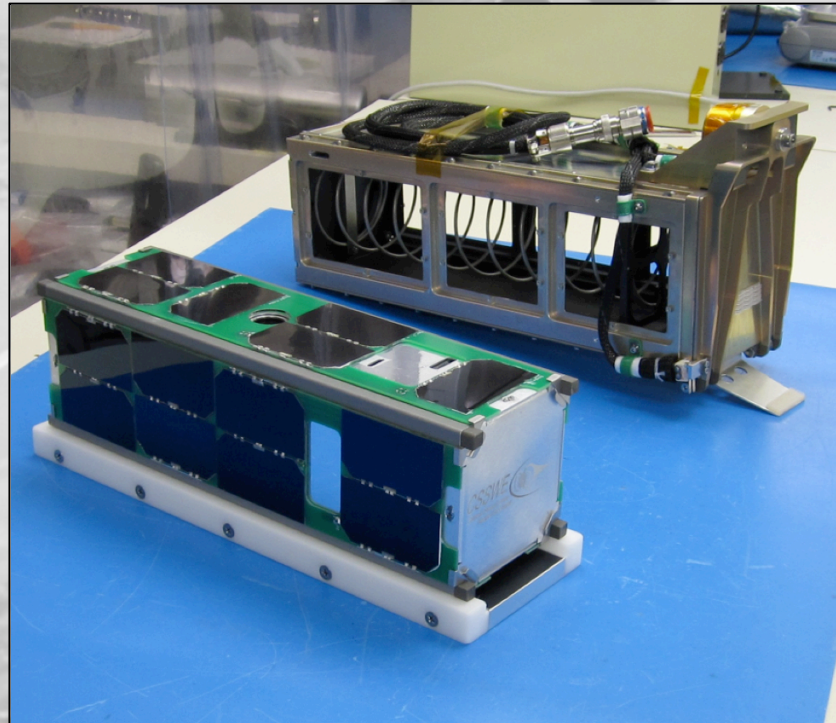
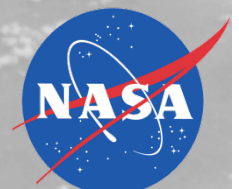




# Colorado Student Space Weather Experiment (CSSWE) Observations of SEPs

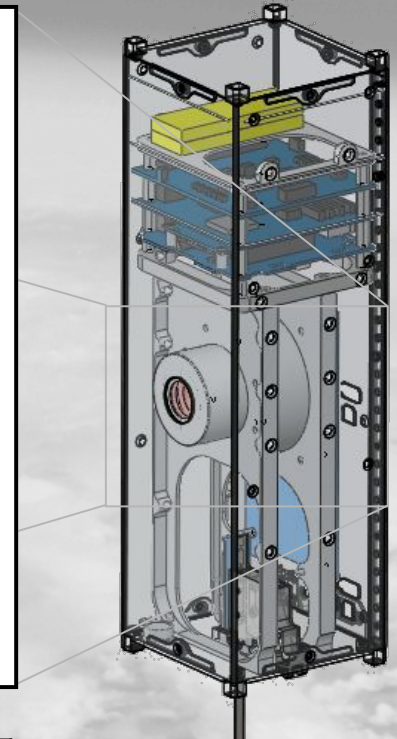
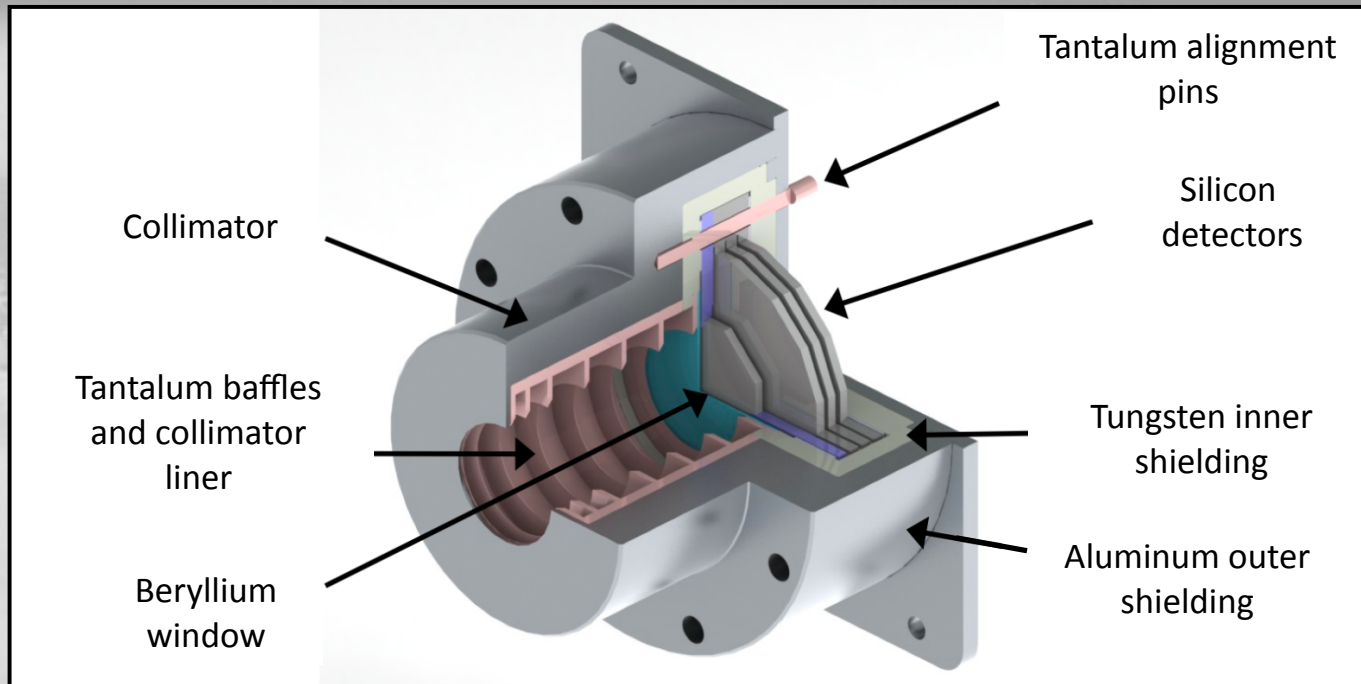


Quintin Schiller  
Lauren Blum, Xinlin Li, and the CSSWE team



# REPTile

Relativistic **E**lectron and **P**roton **T**elescope integrated little **e**xperiment



## CSSWE Science Objectives

	Channel 1	Channel 2	Channel 3
Electrons	0.58-1.63 MeV	1.63-3.8 MeV	>3.8 MeV
Protons	9-18 MeV	18-30 MeV	30-40 MeV



# REPTile Proton Data from '12, '13 and Qualitative SEP Events

**Size:**  
pfu (>10 MeV):  
[GOES 5-min avg.]

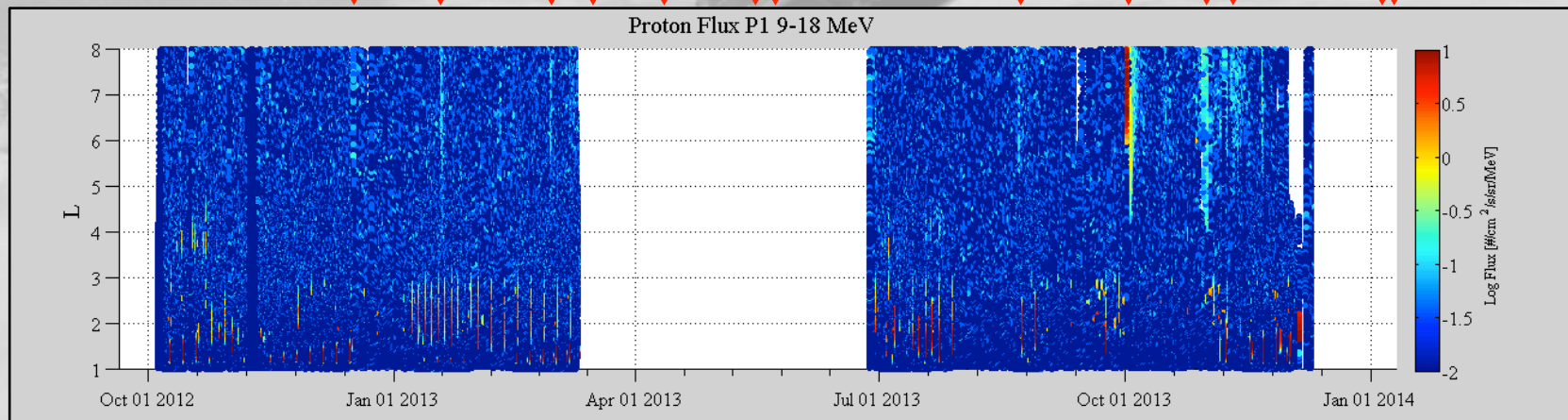
**Small**  
 $j < 60$

**Large**  
 $j = 114, 41, 1660$

**Small**  
 $j < 30$

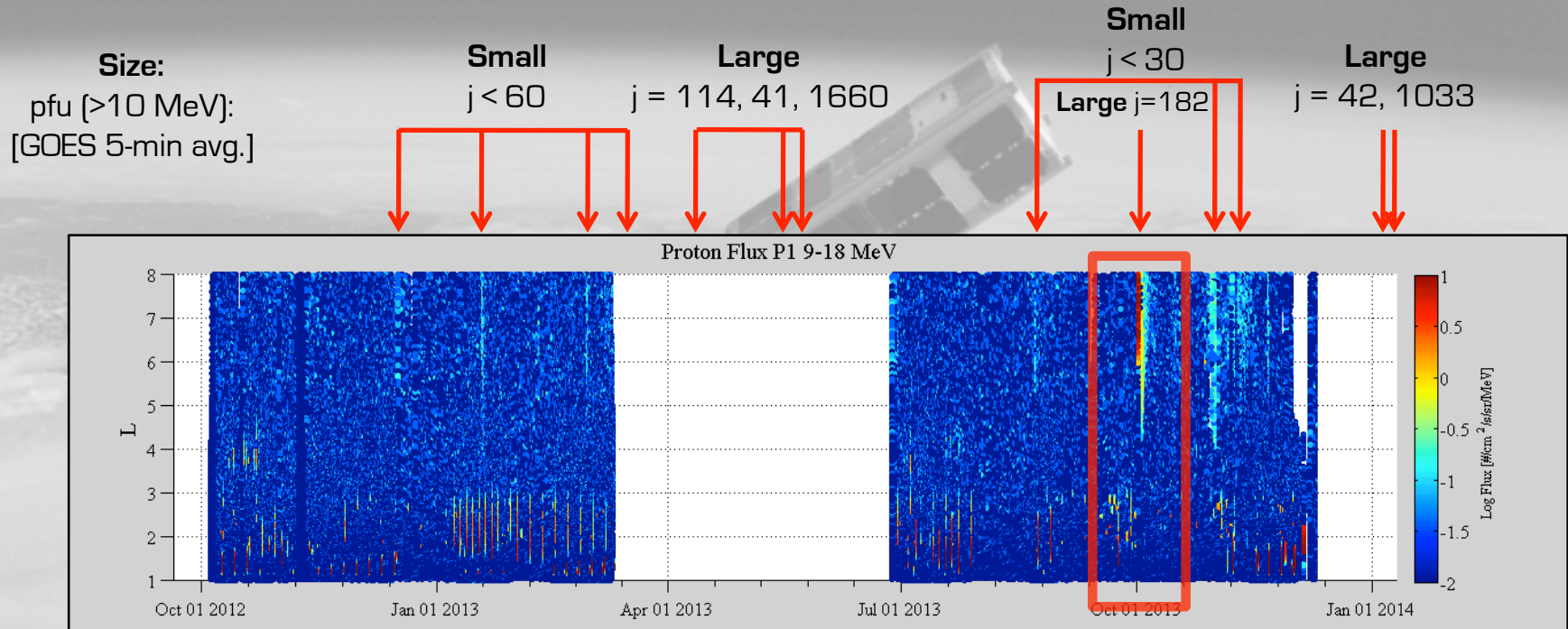
**Large**  
 $j = 182$

**Large**  
 $j = 42, 1033$



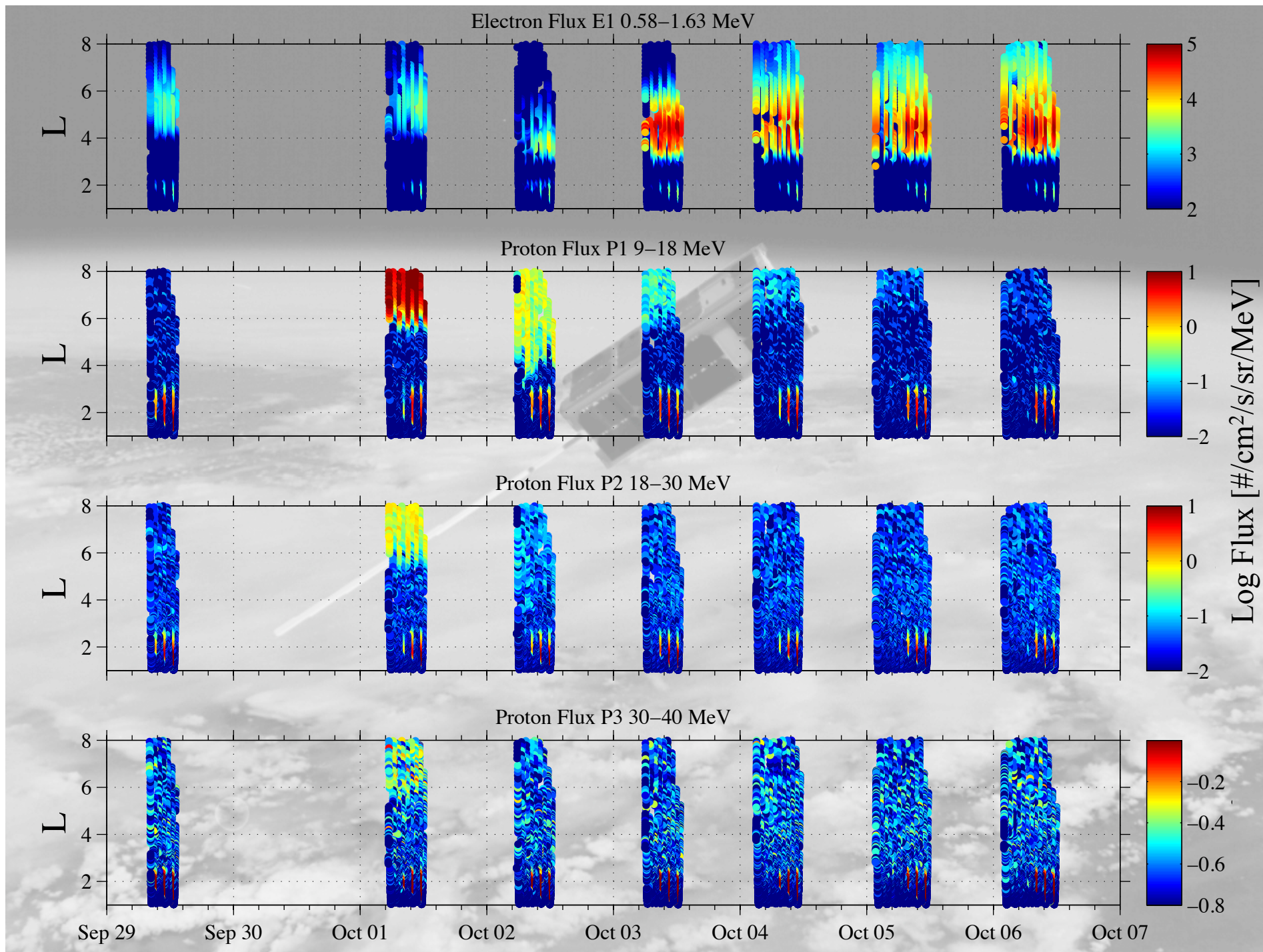
- Sun did not coordinate with REPTile!
- REPTile was on part-time for Feb. 25<sup>th</sup> SEP ( $j[>10\text{MeV}]=103$ )
  - Including higher energy particles

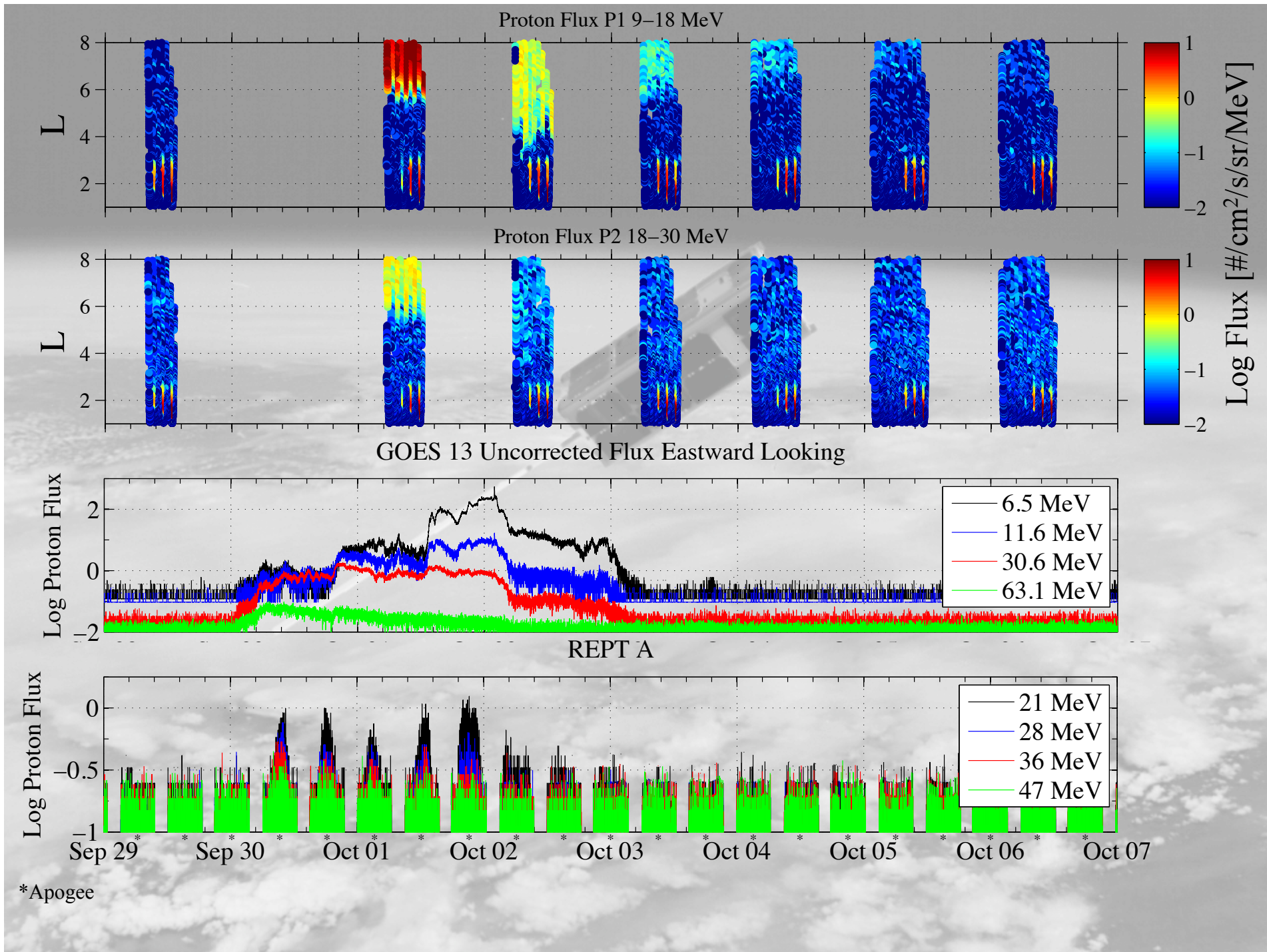
# REPTile Proton Data from '12, '13 and Qualitative SEP Events



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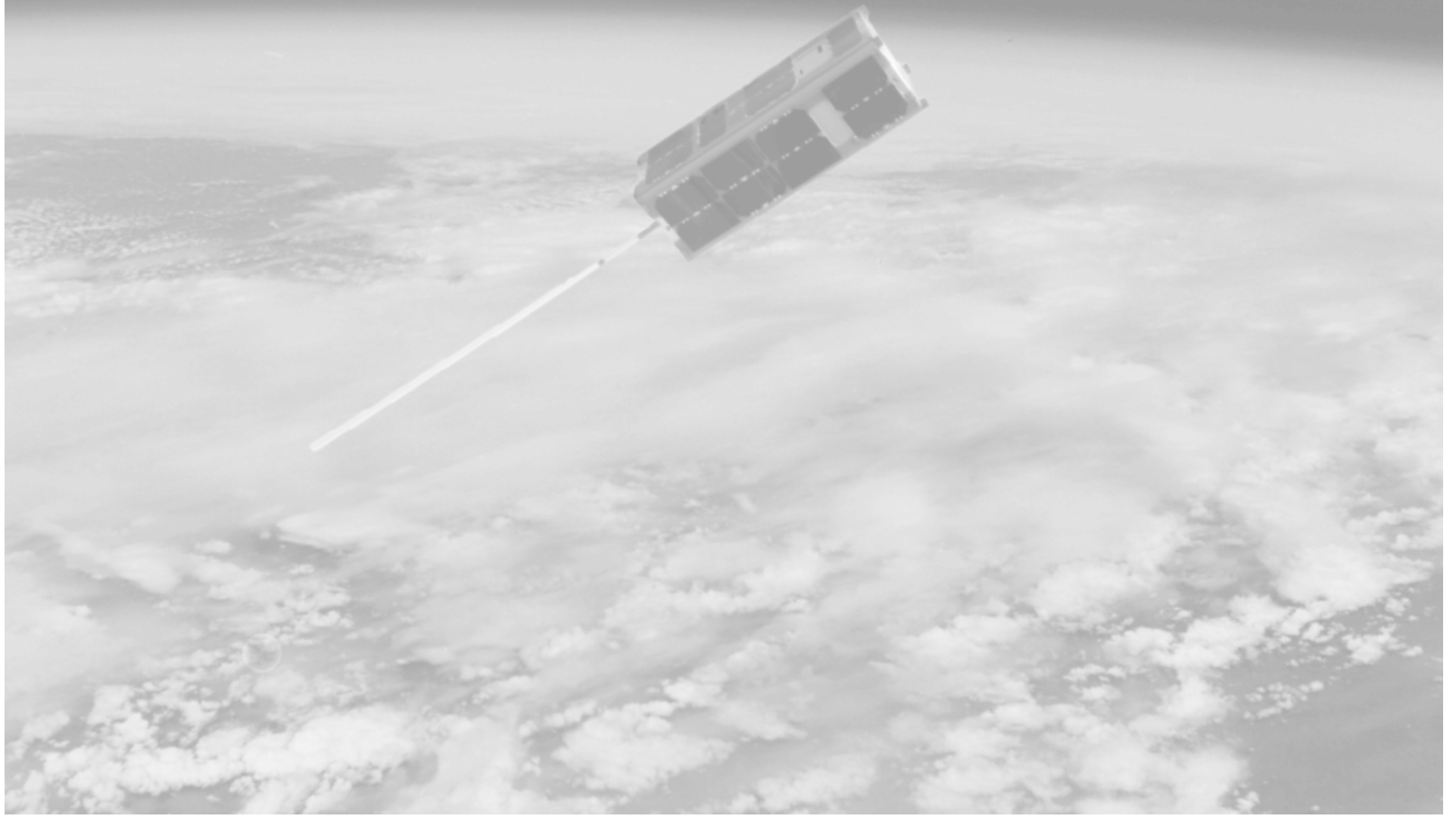




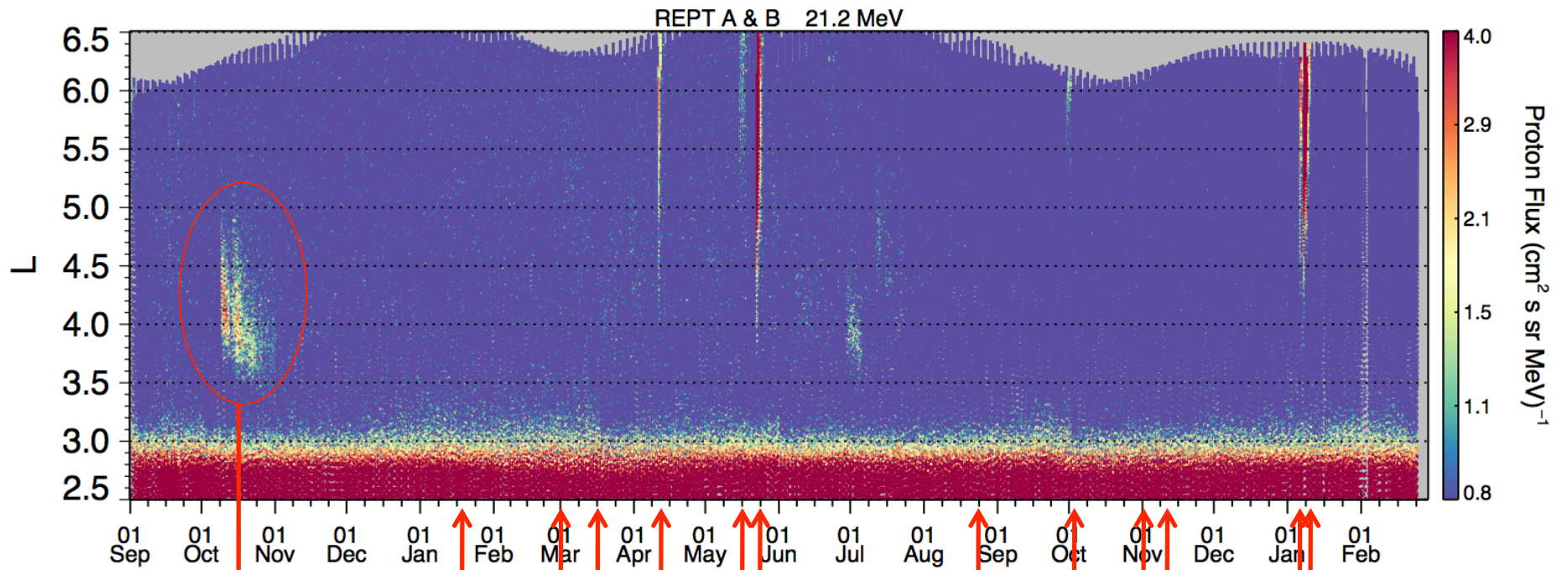
# Conclusion

- REPTile is a robust, reliable instrument that provides clean proton and electron data.
  - Large geometric factor and lower energy threshold lead to clean measurements, even for smaller events
- Inexpensive, but thorough – REPTile design and testing is in multiple PhD theses.
- Future work: data can be used to study SEP events in detail.

# Backups







Ghosting from high-E electrons

Small

Med-Large

Small

Large

