The Final Archiving of Van Allen Probes (VAP) Science Data

https://spdf.gsfc.nasa.gov

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What is Final Archiving?

- **At the end of Phase F, a complete set of VAP data and information held/served very long-term by the Final Archive**
  - Outcome of implementing the VAP Mission Archive Plan (MAP)
  - Data and metadata to enable extraction of all remaining science value
  - Readily, fully and correctly useable for future research
  - Independent of all the existing expertise and all facilities of the original investigation teams and project
    - [Translation: these data will be fully and correctly useable even if (when) all the team members and all project/instrument facilities disappear]
- **NASA's Space Physics Data Facility (SPDF) is the designated Active Final Archive for non-solar heliophysics missions including the Van Allen Probes**
  - VxOs weren't chartered to hold data; VxOs and RAs are older concepts
  - Heliophysics Data Portal (HDP) is the designated service for standardized SPASE dataset descriptions
    - Including support for dataset-level DOIs in the near future

Current Status

- **The VAP project has made a substantial start towards fulfilling its MAP and the final archiving of its data in SPDF**
  - VAP and SPDF have been working together since before VAP launch
  - Defined appropriate data standards, in establishing data pipelines and associated processes to ensure a largely complete set of current VAP science data with relevant metadata is already maintained at SPDF
- **The VAP investigators have produced and posted**
  - Extensive documentation on the instruments, in-flight calibrations and operations, and supplemental information including key caveats to the correct use of the data.

Some Thoughts

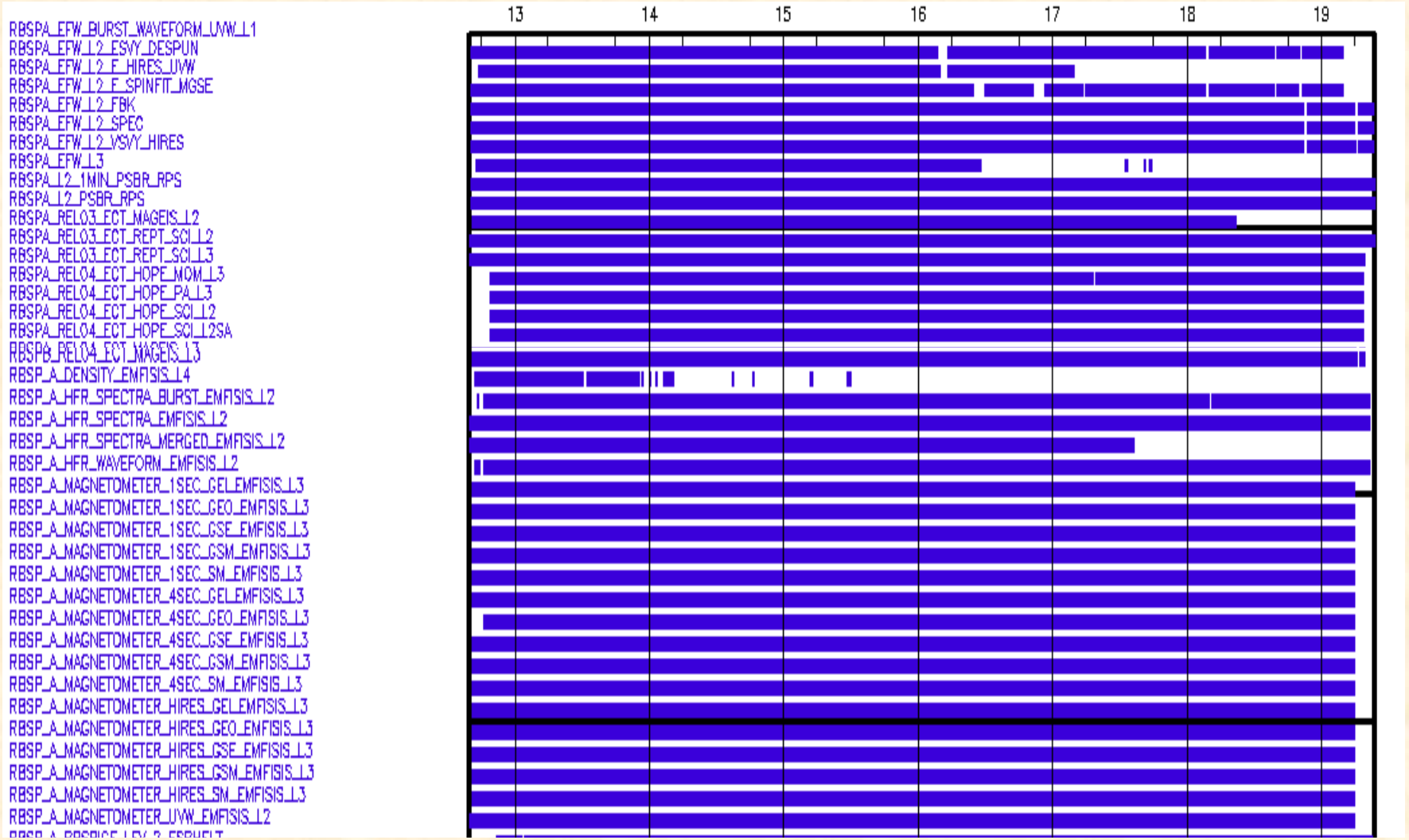
- **We ask the VAP projects and investigators to view the current MAP as a minimum towards fully accomplishing VAP Final Archiving**

- **Documentation: need full, accurate and complete**
  - Dataset and parameter level descriptions
  - Data processing steps and algorithms
  - Caveats (issues and limitations) for the correct use of the data
  - Possible submission of processing software source codes as documentation

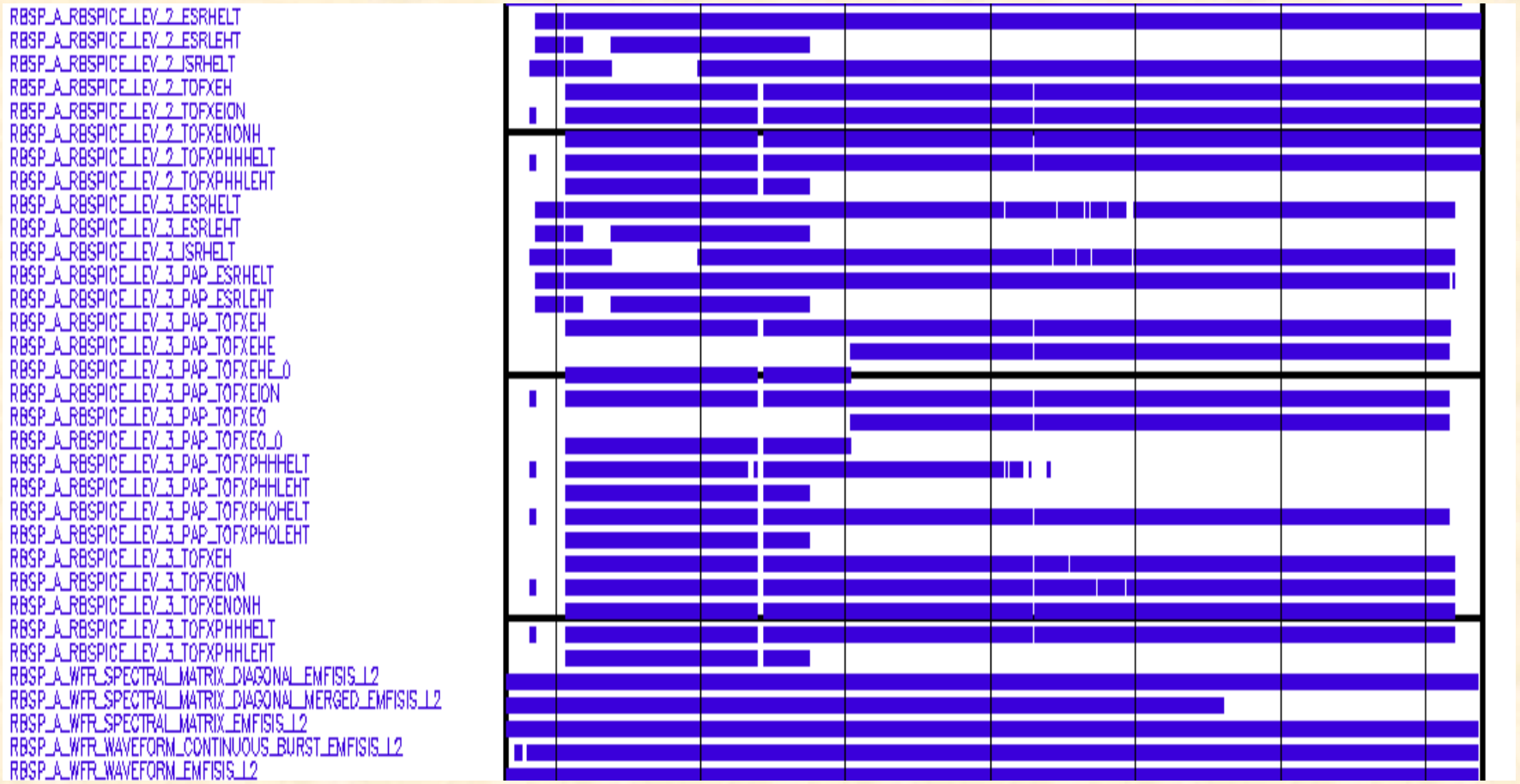
- **Areas for additional consideration may include**:
  - Data products that capture the full science potential of the instruments
    - Creation and/or submission of all appropriate higher-level data products
  - Even where on-the-fly processing, archive specific product instantiations
  - Error bars where possible (or other information to allow correct averaging of data)
  - Do the teams feel there is any significant value to archiving Level-1 products?

- **Approaches to validation of the completeness of archiving**
  - Cross-team reviews? Project call for community comments?

Summary Status- 1



Summary Status - 2



Postscripts

- **I've personally enjoyed working with this project and its investigators from well before launch to today.**
  - This has been a wonderful mission producing wonderful data that's your legacy now important to fully capture as a base for future research
- **Changes in SPDF Personnel:**
  - Bob McGuire is retiring effective July 19th
  - Bobby Candey will be the new SPDF Project Scientist
  - Dieter Bilitza will continue to support VAP archiving
  - Lan Jian has joined SPDF to support new and existing mission interactions