BepiColombo Data Analysis Ecosystem: Quick-Look and Science Analysis Forum



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Context: The ESA/JAXA BepiColombo mission will orbit in the harsh environment of Mercury for a duration of 1(+1) year(s), starting in 2026, with 2 orbiters (17 instruments) dedicated to the planet (ESA Mercury Planetary Orbiter) and its magnetosphere (JAXA Mercury Magnetospheric Orbiter). A tight collaboration between instrument teams is required in order to achieve the science objectives of the mission. The ESA Science Ground Segment (SGS) is currently developing and operating a data analysis ecosystem to support the instrument operations and scientific data monitoring, in close collaboration with the instrument teams. At the end point of the data processing chain, the Quick-Look Analysis (QLA) interface is able to interactively display the instruments operational and scientific data, and to share some of these science plots among the BepiColombo teams. This functionality is being complemented by a Science Analysis Forum (SAF) that will provide the necessary space to discuss mission science data interpretation.

Quick-Look Analysis Science Analysis Forum Web-interface to discuss about data with others Web-interface to analyse the data acquired BepiColombo Quick-Look Analysis **Restrictions:** Mission / Instrument specific BepiColombo Quick-Look Analysis High protons/electrons counts in April 2020 A Mission Range: 2020-04-09 00:00:00 ~ 2020-04-11 23:59:59 Apply Dashboard: collects widgets in a time range Q + B = X P_BIN_ P_BIN_5 **a**gla-SERENA Instrument team **∆**αla-BERM categories Science: After data processing Snapshots, (Source: PDS4 archival data) Metadata, Generic 22:00 Apr 9, 2020 Link to QLA Link to data: [BepiColombo Quick Look Analysis 2] (BepiC) unrestricted **Hermean Environment WG** ■ BERM Science 🖿 Power Consumption - BERM 🔗 We see radiation (high protons and electrons counts) in our BERM data, any idea? Q + B = X / + Normal forum usage (posts, replies, etc.) Private category for SGS discussions. Topics are only visible to + Create a new Topic Operations: Near-real time High protons/electrons counts in April 2020 Scientific (Source: Telemetry) High protons/electrons counts in April 2020 **Operational** ■ Hermean Environment WG protons, electrons, radiation dashboards 13 Apr **★** April 10th, 00:00 − 07:00, (GMT+00:00) UTC \bigcirc B $I \mid \mathscr{O}$ 99 \checkmark $\square \mid \boxminus \boxminus \boxdot \Longrightarrow \spadesuit$ **Quick-Look Analysis (QLA) highlights:** Hi everyone, **Science Analysis Forum (SAF) highlights:** On-the-fly reading and down-sampling of PDS4 data, data caching on its way. We see radiation (high protons and electrons counts) in our BERM data, any idea? Discourse instance to support science discussions (=forum). Interactive data visualisations (plotly.js library), filterable/sortable tables, images... + Create Topic Tight coupling with the data source (QLA): image snapshots, metadata. cancel Near real-time checking of scientific (PDS4) and operational (telemetry) data. Plugins for authentication, restrictions, metadata handling (data explorer). Customisable views (dashboards) to combine data sets. Report science events to other teams Preservation of the information. Sharing capabilities of the data plots. Look back at the science data

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