

Preserving Herschel Knowledge with Legacy Documentation: the HELL library for Herschel

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The knowledge gained by a space mission is not just measured in terms of data obtained, or the number of refereed publications, it is also measured in terms of the amount of technical knowledge and experience that is accumulated in solving the complex scientific and engineering problems entailed in designing and running a space mission from its initial concept to its final archive phase. This collective memory of a mission is one of the most important legacies that it provides.

One of the issues with this collective memory is that, at different phases of a mission, unless the accumulated knowledge is documented, it may be lost as project members pass on to new missions and new challenges. The aim has been to conserve this collective knowledge as far as is possible for a future when no personnel remain who have experience of working for Herschel.

One of the major products of the active archive phase of the Herschel mission has been to build up a library of documentation that preserves the collective memory of Herschel. This library, the Herschel Explanatory Legacy Library – HELL, <https://www.cosmos.esa.int/web/herschel/legacy-documentation> – is the result of a careful selection of the estimated more than one hundred thousand documents generated by the Herschel mission over its lifetime from initial concept, preserving the approximately 1% of documents generated that are the essential legacy of Herschel.

The end result is a library of over 1200 documents that preserve the most essential knowledge of the Herschel mission. This library is arranged in a pyramidal structure with four Handbooks, one for each instrument (HIFI, PACS and SPIRE) and an overall Observatory Handbook as the top level, from which three levels of documentation from the most basic background about the mission and its instruments (Level 1) to detailed technical or historical information (Level 3) hang.

All documents are placed in the ESA Document Management System (DMS) and are tagged to allow them to be easily located by search engines. Documents are, with a very few necessary exceptions, stored in the DMS in PDF format. Each document is stored with an abstract, date and version number, authors and keywords to allow easy retrieval. A spreadsheet is provided in Excel and in CSV format for each instrument and for all documentation in HELL to be sorted on multiple criteria and allowing searches to be made on document class or keywords to retrieve all documentation of a class of interest.