# StarView: The Object Oriented Design of the ST DADS User Interface

J. D. Williams, J. A. Pollizzi (STScI)

StarView is the user interface being developed for the Hubble Space Telescope Data Archive and Distribution Service (ST DADS). ST DADS is the data archive for HST observations and a relational database catalog describing the archived data. Users will use StarView to query the catalog and select appropriate datasets for study. StarView sends requests for archived datasets to ST DADS which processes the requests and returns the datasets to the user.

StarView is designed to be a powerful and extensible user interface. Unique features include an internal relational database to navigate query results, a form definition language that will work with both CRT and X interfaces, a data definition language that will allow StarView to work with any relational database, and the ability to generate adhoc queries without requiring the user to understand the structure of the ST DADS catalog. Ultimately, StarView will allow the user to refine queries in the local database for improved performance and merge in data from external sources for correlation with other query results. The user will be able to create a query from single or multiple forms, merging the selected attributes into a single query. Arbitrary selection of attributes for querying is supported. The user will be able to select how query results are viewed. A standard form or table-row format may be used. Navigation capabilities are provided to aid the user in viewing query results.

Object oriented analysis and design techniques were used in the design of StarView to support the mechanisms and concepts required to implement these features. One such mechanism is the Model-View-Controller (MVC) paradigm. The MVC allows the user to have multiple views of the underlying database, while providing a consistent mechanism for interaction regardless of the view. This approach supports both CRT and X interfaces while providing a common mode of user interaction. Another powerful abstraction is the concept of a Query Model. This concept allows a single query to be built from single or multiple forms before it is submitted to ST DADS. Supporting this concept is the adhoc query generator which allows the user to select and qualify an indeterminate number attributes from the database. The user does not need any knowledge of how the joins across various tables are to be resolved. The adhoc generator calculates the joins automatically and generates the correct SQL query.