Question 3: If you retrieved data from MAST in the last 6 months, what did you think of the performance?

Q: DADS ought to include an option to skip creating *DRZ.fits files. For serious work, I find that I usually choose to re-drizzle anyway, so the DADS-supplied drizzled files just hugely increase the disk space and download time requirements.

A: Users can select specific extensions to be returned via the Retrieval Options page. Use the "To override the above defaults:" section of the page to enter the desired extensions.

Q: FTP access to staged data can be a bit laborious. It would be nice to have wget access as well.

A: There is actually a way to do this: wget can handle ftp urls as well as http. You can use a glob ("*") to get all the files in a directory. Here's an anonymous example:

 wget ftp://archive.stsci.edu/stage/anonymous/anonymous12345/*<ftp://archive.stsci.edu/stage/anonymous/anonymous12345//*>

and here's an authenticated example:

 wget --ftp-user=myusername \
    --ftp-password=mypassword \
    ftp://archive.stsci.edu/stage/myusername/myusername12345/*<ftp://archive.stsci.edu/stage/myusername/myusername12345//*>

Users can also store the ftp-password and ftp-password in a ~/.wgetrc file (use "chmod 600 ~/.wgetrc" to make it readable only by you):

```
% cat ~/.wgetrc
ftp-user = myusername
ftp-password = mypassword
```

Then the --ftp-* runtime option will not be needed. Please look at the wget manpage for more info.

Question 5: Which MAST interfaces do you commonly use?

Q: I think that the site is poorly organized and change frequently. The pages are too crowded and contain too much text. The pages should be minimal. It's very hard to find documents and the relevance of the document for my specific need is not clear.

Q: Index page to be improved

A: We recognize that given the large amount of documentation MAST provides to users, it can be hard at times to find the relevant documents. We are in the process of re-designing our portal and we hope that you will find it better addressed user needs.

Q: It should be a bit easier to find out if something is down.

A: MAST tries to inform users of scheduled and unexpected downtime in a timely manner. Typically we post a message on our main site to warn users of issues they might encounter with specific missions or services we support.

Question 7: Please rate the usefulness of the following GALEX tools

Q: GALEXView fluxes should have errors!

A: GALEXView in fact provides NUV, FUV errors for both fluxes and magnitudes.

Q: I use CasJobs as interface. My issue is to return all sources around a LIST of positions (sources in my project X-ray database) --

CasJobs provides users with the ability to upload target lists. Look for the Import tab, which leads to brief instructions on formatting before you proceed. In short, this can be accomplished currently using the neighbors function, once a target file is imported click on mydb and choose neighbors, it's important to note that the file has to contain at least two columns both named ra and dec. If you have trouble finding this, please contact us at help@stsci.edu.

Q: I can use GALEXView to find my objects nicely, but I really have to go to the Classic search to get meaningful fluxes.

A: MAST made a conscious decision a few years ago not to upgrade its "Classic" (MAST style) search interface form and there are only a very few functions it performs better than GALEXView. In fact GALEXView provides NUV/FUV fluxes and magnitudes. These quantities are drawn from the same internal MAST database, so you had better get the same answers when using the two search tools!

Q: GALEXView would benefit from a tool that would create color postage stamps of a list of objects, similar to the SDSS Image List Tool. I feel the current design of showing an entire tile is inefficient and frustrating to use if all I want is a set of.

A: We are aware of this limitation and we hope to bring online a postage stamp service for GALEX and other MAST missions in the near future.

Q: The layout of the GALEX data archive could be considerably improved. At the minute one has to go through layers to get to the fundamental data. Not a big issue however.

A: MAST is in the process of developing a new, more versatile portal. We are confident it will remove many of the current limitations and provide a better experience for MAST users.

Question 8: As part of the GALEX closeout activities, MAST is working closely with the GALEX project to archive pertinent documentation, supporting data and software in addition to the final versions of the data. Are there any items that you think are especially important to archive in MAST?

Q: Need to make sure that all the raw grism images are available. The grism data has not been updated yet.

A: Owing to other priorities, the GALEX Project was late with its delivery of the GR6/grism. As of late October, 2011, all grism data that has been (or will be) observed by GALEX is now in the GALEX archive.

Q: Better GRISM spectral data extraction for full time-tagged data. It's important to archive the photon tags data.

A: The project is working with MAST now to make so called "raw6" files for conversion to photon list files. The conversion to photon list (time tagged) files will be done in 2012 with some help from former GALEX staff members who have written instructions on how to do this conversion. MAST has already invested in hardware for this purpose, and it has a high priority item. Please check back with us in mid-2012 to get a timeline on our progress.

Q: It would be nice to have a way to reduce the spectra taken by GALEX. There is an IDL software that was written for the GR1 release, but since then no update. The GALEX spectra are one of the important scientific outputs from this mission.

A: MAST plays no role in endorsing or supporting particular software packages. If users contribute tools, MAST has a "contributed software" area for this purpose, but it hasn't seen much input. As for the GALEX grism spectra, MAST gives a User FAQ on how to extract these from the grism file. It also has a VO service that allows users to extract grism spectra on the fly in IVOA compatible format and to arbitrary wavelength limits. One spectroscopic application that supports this service at the Institute is Specview (see http://www.stsci.edu/resources/software_hardware/specview).

Q: Ability to perform photometry in the same way as the GALEX catalogs.

Q: It would be useful to have a clickable/zoomable exposure map of the sky which would give exposure information on arcminute scales.

Q: Detailed 'Graphic Documentation' with 'HD Pixel Photos'

A: MAST supported a sky-wide GALEX map browser for a few years, but it was not widely used and it was slow to load. MAST plans to precomputed map images in Healpix format from the GCAT survey project and hopes to have them available in 2012. Feel free to ask us about it!

Q: I still found many sources missed by the pipeline. Hope you will continue updating the catalogs. --

A: MAST will be ingesting the GCAT catalogs, which will be a list of all vetted from the GALEX sky surveys through GR6. This will give a list of unique identifications (for the first time) of all celestial sources GALEX has detected - instrumental artifacts will be removed to the extent possible. A small set of GR7 products will become available in early 2012. There are some plans to update the GCAT to accommodate them, but at this writing it is still not clear.

Q: GALEX photometry derived using optical position and/or shape priors, e.g., from the SDSS. --

A: See previous comment on the GCAT (GALEX Catalog Team) effort.

Q: I'd suggest every data product available should be archived.

A: MAST plans to do this. There will also be a "deep archive" of raw materials that are not routinely used. These can be made available by special request (note: such requests have historically been very rare).

Q: Is it possible, to supply GALEX data, corrected for saturation?

A: The short and long answer both is 'no'. The photons are lost. Users should realized that objects whose fluxes are saturated in a deep exposure may be retrieved in short exposures, e.g. using data from the AIS (All Sky Imaging Survey).

Q: Determining the quality of the data is very important. Easy ways to do this should be identified clearly. --

A: The GCAT will be the resource for this. Also, it is critical for users to know that MAST archives data and enables its discovery and retrieval. This included project transmitted data quality flags, and MAST posts tables listing such flags where they have been provided. Beyond this, it is beyond MAST's hope for experts to give scientific advise as to the use of data. If a mission is still active, MAST will transmit such questions to the experts.

Q: Galex documentation could be a lot clearer. --

A: We welcome a follow up comment to elaborate on this point. Remember that MAST publishes what the project provides. We can help with the navigation to resources, but the content comes from the project.

Q: Will the mission provide all the NUV and FUV fluxes and spectra?

A: As above, the GCAT will provide a definitive list of GALEX observed objects and positions referred to the NUV-centroided coordinates. Users wanting the last word on the grism spectra should go to the GR6/grism survey, for example at: http://galex.stsci.edu/GR6/?page=tilelist&survey=allsurveys&showall=Y

Q: Where can I find instrument documentation, techniques for grism spectral extraction and analysis?

A: The project will transmit either all its documentation on instrumentation or links to them on their own page to MAST at the projected mission termination date (currently Dec/31/2011). These pages will be stored at MAST. User with technical questions are advised to take them to the GALEX project before the termination. MAST as always is happy to transmit them.

Q: GALEX CasJobs is in a poor state. The output results cannot be exported as FITS tables due to some bug, have to use .CSV. Please fix!!!

A: Output results can be exported as FITS, testing appears to have uncovered a bug where ASCII data only exports the first character of a string but integer and float data export fine to FITS format.

Q: I use CasJobs as my interface to GALEX data. My issue is to return all sources around a LIST of positions (sources in my project X-ray database).

A: This can be accomplished currently using the neighbors function, once a target file is imported click on mydb and choose neighbors, it's important to note that the file has to contain at least two columns both named ra and dec.

Q: GALEXView: When I have coordinates of an object from another survey, and I look them up in GALEX and no nearby source is found, it isn't intuitive to understand for how long the field was observed (if at all), so one can derive upper limits on the flux.

 A: When searching for objects using coordinates and nothing is found search again using tiles instead of objects, the results returned will indicate which tiles cover the coordinate area and gives pertinent information, exposure time, distance from center of tile, etc.

Question 9: Please rate the usefulness of the following HLA tools

Q: HLA: Clumsy search interface; standardize with DADS please. Often broken -- can't download files. Too many columns in 'inventory' - can't easily collect and compare the entries.

A: The number and order of columns displayed in the Inventory view are user-selectable: drag the column descriptions in the table below the inventory to customize them. Your custom order is remembered if you return to the HLA using the same browser and computer, but if you use a different computer it will be necessary to make the column changes again. In the future it will be possible to save custom table column settings as user preferences using the common MAST portal and signup.

Problems with data downloads should not occur; if noticed, please bring them to our attention right away. Users seem in general to be satisfied with the HLA search interface, but we welcome any suggestions on how to make it more accessible and convenient to use.

Q: HLA composite images often are poorly registered. It would be useful to be able to register and difference images before downloading.

A: Improving the registration of images and source lists in the HLA is one of our long-term goals. We have released a number of ACS mosaics in which images taken in different visits are registered to a common frame. The upcoming WFC3 pipeline includes an improved image registration algorithm, which will be used to generate more mosaics. A project to cross-register visits and match source lists is currently under consideration.

Q: HLA: the function `print' must also give a JPG-image which is more needed than a paper copy.

A: This functionality will be included in the HLA image display interface for the next HLA release (DR6).

Q: Tried to ACS tiles of COSMO. Found it extremely difficult to determine which of the 81 tiles covered an object of known coordinates on the sky. Some tiles had the same coordinates listed for them but actually covered different regions of the sky.

A: The HLA Footprint Query can be used to find which data include a given position in the sky. This can be done through the standard search page at hla.stsci.edu/hlaview.html, by selecting the appropriate RA and dec and a radius of zero. The query can be restricted to specific instruments and levels of data, such as user-contributed (High Level Science Products). Put 'cosmos' in the Proposal ID box to select only data from the COSMOS program.
Note that the CRVAL column in the table is the same for all the COSMOS tiles because they are part of a uniform grid that has the same reference pixel location for all tiles. If you want to compute the locations of the tiles yourself (rather than rely on a zero-radius HLA search as suggested above), you could use the regionSTCS column that contains the footprint description.

Q: Useful is one thing, and effective is quite another. Example, HLA advanced search options are useful but far from optimum. For one thing, 'all' instruments should be an option but not the default. Prefer that you store my previous search configuration.

A: Users will be able to set many configuration options, such as search preferences, columns displayed, and so on, as part of the upcoming Archive Portal.

Q: Direct download of HLA images using VO interfaces requires some sort of hacking. It would be nice to have it properly documented.

A: We will register the HLA SIAP service soon, but the service currently used in the HLA has some non-compliant features. We encourage users to access the HLA SIAP service directly at http://hla.stsci.edu/cgi-bin/acsSIAP.cgi?strict=1 (which is nearly VO-compliant). Remove the 'strict=1' parameter to get the full HLA search results (which include non-image data links as well as images).

Q: If searching RA/Dec, then the cross hair for the image preview should be centered on that RA/Dec, not the center of the image.

A: In the HLA interface, it is possible to center the view on the requested RA/Dec position by using the Cutout option under Advance Search. Then in the Images view, each image will display a region of the desired size around the search position. We are considering a number of additional options for the interactive images display and will add this cross hair position request to our list.

Q: Default search radii are ridiculously large and frequently result in false positive (other objects) in addition to the science target. When downloaded, why do we have multiple folders, including ones which exist only to hold 1 folder?

A: The default search radius is based on the object size if it is known, and otherwise is set to 0.2 degrees. This may not be optimal for all searches; users can specify their own search radius before the search is executed. For stellar objects with accurate positions, you may find it useful to add r=0.001 (or even r=0) to your searches. We agree that making the the default search a user-specified option would be useful for some users.

The folder hierarchy is designed to group downloads of multiple observations from a single visit. It may be a bit too complicated in cases where only a single dataset is being downloaded from a visit. Check the 'Download Sequentially' option in the cart rather than 'Zipped File' to get all the cart files to go into a single directory.

Q: A direct link to already published data

A: There is a link to related publications in each proposal page, which is linked from the inventory table. You can access the publication links directly from the MAST search interfaces but not from the HLA interface; ultimately we plan to integrate all these databases together for easier access to all the information.

Q: Being able to view the footprint view and the table beneath it both in the browser window, without needing to scroll up and down.

A: We do plan to add the ability to split the footprint view into two separate windows so that the table and the footprints are visible simultaneously. The timescale for this addition is uncertain at the moment, however.

Q: There is a bug (or 'feature'?) such that for some combined images, the HLA thinks a position is within the combined product, but it is in a blank area that is within the mosaic, with astrometry, but which actually has no data. This happens with surprising frequency.

A: The footprint for HLA-produced data faithfully represents the area of the sky covered by the contributing observations. Unfortunately, this is not currently implemented for user-contributed data (High Level Science Products), for which the footprint is approximated by the outline of the FITS image frame. As a consequence, in such cases images will be included for which the search cone intersects the image frame, but does not overlap areas of the image with actual data. We do plan to improve the accuracy of the HLSP footprints in the future.

Q: The ability to search for HST observations with field characteristics would be helpful (e.g. source exposed to TBD level in center of FOV, source within TBD of ACS WFC pointing, etc.) There is currently no way to search for PSF template candidates from direct imagery data except for laborious hand inspection of hundreds of exposures.

A: Many such searches are possible with a combination of queries from the HLA interface. For example, it is currently possible to select one or more search positions and a desired radius, and then filter the search results by spectral element and exposure time. However, it is not possible to select images that contain bright stars.

Q: In the HLA preview it would be useful to have an interactive display so that the cursor could use for displaying fluxes of objects, magnitudes, etc.

A: A similar feature is available in the Interactive Display. With source positions overlaid on the image, clicking on a source brings up a browser window with position and flux information for that source. The image pixel value (in image units, typically electrons/s) at the mouse position is also shown in the box in the display's upper left corner.

Q: It is a bit confusing to be able to retrieve .drz images from H[LA], but to have to go to MAST for other images

A: Other images are in fact available from the HLA interface, but require a bit more effort. Users can follow the link to "more images" provided in the image view to display a list of original images (flt) and other intermediate images to download. These images can then be placed in the cart and retrieved as desired. Each list covers all data pertaining to the given visit.

Q: For STIS echelle spectra and some others, DO NOT scale the plots by the brightest point (which is often a hot pixel of Ly alpha airglow). Use the 98-th percentile, maybe times a small factor > 1.

A: The suggested approach would work well in some cases, but it might not work properly for objects with a single strong line. The new plotting tool allows users to easily select a smaller portion of a spectrum, and automatically rescales within that window. This should work well enough for most purposes, but further feedback would be welcome.

Q: Would like to be able to search objects in MAST data by object type, redshift, and bandpass of available data. For example, I'd like to be able to easily search the MAST archive for all spiral galaxies with redshifts less than 0.1 and

coverage in the U,B,V,and I bandpasses.

A: This type of search is possible with the HLA, but only if the user provides the initial list (e.g., via NED or similar). Unfortunately HST data do not contain a target categorization with the necessary information for this type of search.

Question 10: Please describe your experience with the Kepler archive.

Q: I heard that Kepler data is not open to the public, needed to sign some institutional papers etc.

A: This is not true. While this is proprietary data in the archive, there are at least 3 quarters (more than 7 months) of data that are public. Data continues to become public. Perhaps you were misled by the KASC group, which welcomes new members but requires those members to sign non-disclosure agreements.

Q: It takes time to find this web page - it is well hidden.

A: The quickest way to the Kepler data search page from the main archive page, http://archive.stsci.edu/ , is to select the "Kepler Data" item under the Mission Search tab, as shown here. How were you finding it?
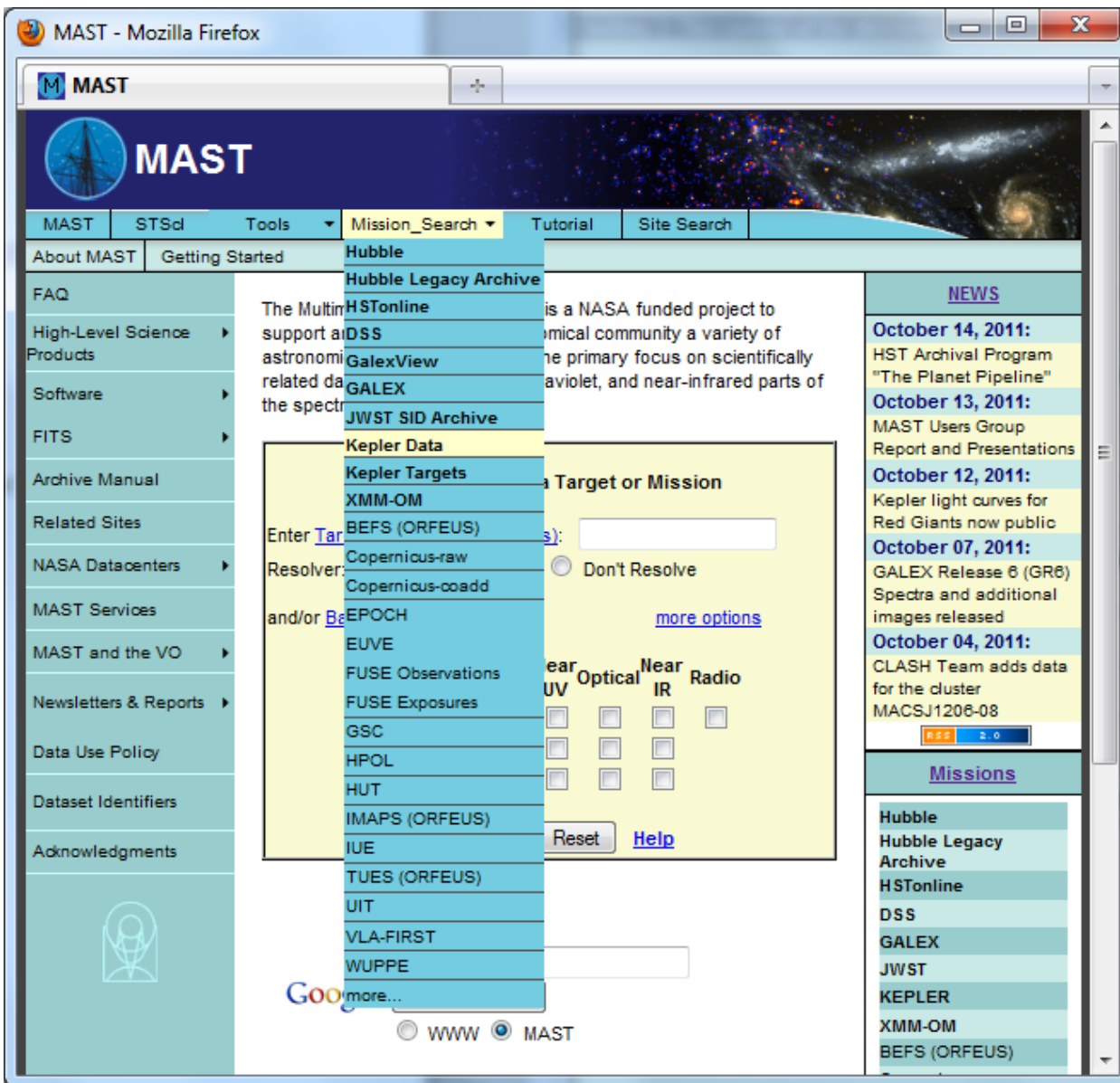
Q: The content of the directories is not clear.

A: I assume the comment refers to the ftp direct download directories.   These directories are provided as a convenience, only, for users who wish to download all public data for a given quarter or all data taken for their

investigation/proposal. We tar the files because ftp'ing one tar is more reliable that ftp'ing a number of individual files. Users who only want a subset of the data should use the Kepler Data Search interface, http://archive.stsci.edu/kepler/data_search/search.php , to locate and request the data.

Q: Documentation is not easy to use.

A: Please provide more information as to what the problems are. Is the documentation lacking, difficult to find, provided in a poor format, all of these and more?   Suggestions are welcome.

Q: The 'raw' data is in fact not raw (it is presented after median filtering) - so I think it will be good to change its name or clearly   indicate   this   fact.

A: MAST is stuck with the columns names provided by the Kepler Project. These names are changing as the Project changes both the content and structure of the light curves. I agree a warning should be provided when a column name is misleading.

Q: Kepler has changed several times the data format, which makes more complicated the access to the information (although this is under Kepler responsibility, not MAST)

A: We agree changing the format causes problems for existing users. We believe the changes do benefit the users by providing additional information. We also believe the light curve file structure is now fixed.

Question 12: How important are the following current or planned features for the overall success of MAST?

Q: It would be extremely useful to be able to save user preferences for what should be displayed on the output.

A: We are working on allowing users to do exactly this in our new portal. Preference should not be limited to output but, for example, extend to the overall layout of the site.

Q: Ability to search for HST observations with field characteristics would be helpful (e.g. source exposed to TBD level in center of FOV, source within TBD of ACS WFC aimpoint, etc.) . There is currently no way to search for PSF template candidates

Q: It would be really useful to have access to basic information about individual images in HST data, as opposed to having to download entire associations before knowing what the exposure times are.

Question 13: General comments

Q: It is an eternal pain not to be able to find out what the detailed contents of an HST association are

Q: If IUE or Copernicus archives are stored in fits binary tables or whatever please make available a simple routine for decoding them

Q: Would like to be able to search objects in MAST data by object type, redshift, and bandpass of available data. For example, I'd like to be able to easily search the MAST archive for all spiral galaxies with redshifts less than 0.1 and coverage in the U,B,V,and I bandpasses.

Q: Have you considered providing better integration with other archives such as the HEASARC? In other words, providing links to those archives to inform the user that they have similar data that may be of interest, e.g., UVOT data from Swift.

A: MAST has always been actively collaborating with all other archives. Recently we have tightened our relationship with HEASARC and we will soon be able to offer to the community SWIFT UVOT data. We believe this to be extremely important for users.

Q: Major archives should coordinate efforts to develop a common VO-style interface that directly access their archives and provide links to related data in other archives.

A: We are currently in the development phase of a new MAST portal which will be integrated directly with the Virtual Observatory efforts and share with VO many of its look-and-feel features.