Introduction and Highlights

Rick White
Karen Levay
Barbara A. Mikulski Archive for Space Telescopes

MAST archive was renamed in honor of Maryland Senator Barbara A. Mikulski. Senator Mikulski recently became both the longest-serving woman member of the U.S. Congress and the longest-serving female senator. She has long been a strong and effective supporter of space science and of the missions in the MAST archive.
MAST Data & Growth

205.7 TB - Holdings Size as of Nov 1
3 TB / month – Average Ingest Rate per month
1,062,167 - Average # searches per month
16 TB – Average TB distributed per month
Holdings as of Nov 1 2012
Distribution 2010 –2012
Publications

MAST continues to identify papers using data for most of the MAST missions. HST archival papers continue to be more than half of the annual total.
Archive Funding Sources

- Missions
  - HST
  - JWST
  - Kepler
- MAST
- VAO (<2 FTEs)
Archive & MAST Staff

- **Archive Team Leads:** Carl Johnson, Rick White, Gretchen Greene
- **Data Systems Branch** – Mark Kyprianou
  - 20 members
  - Development and testing of HST/JWST/Kepler processing pipelines, archival, distribution processes
- **Data Processing Archive Services Branch** – Faith Abney
  - 11 members
  - Operations for HST/JWST/Kepler pipelines and distribution
- **Archive Sciences Branch** – Karen Levay
  - 18 members
  - “MAST” archiving and distribution; Interface development for all Missions/Datasets; Bibliography support; VO work; HLSP Support

**Hubble Legacy Archive** – Lee Quick coordinator
- Members from various areas in STScI (MAST, DSB, INS, Mission Office)
- ~ 10 people at various levels of effort
- HLA pipeline, catalog & interface development
Staff Changes

- Departures
  - Alberto Conti

- Arrivals
  - Anton Koekemoer
  - Anastasia Alexov

- Pending Retirement
  - Myron Smith

- Pending Arrivals
  - Sahar Allam
  - Scott Fleming
Highlights with details later

- HST updating infrastructure (*M.Kyprianou & P.Greenfield*)
- Hubble Source Catalog (*B.Whitmore*)
- JWST Data Management System (DMS) design and development underway (*G.Greene*)
- Kepler DMC activities (*D.Fraquelli*)
- Kepler “Colors Table (*M.Smith*)
- MAST Activities
  - GALEX closeout & photon-list generation (*M.Smith & B.Shiao*)
  - HLA Project (*L.Quick & S.Casertano*)
  - Data Discovery Portal (*T.Donaldson*)
  - Common Archive Observation Model (*B.McLean*)
  - Spectral Classification Tool (*M.Smith*)
- Many activities are aimed toward unification of MAST holdings and interfaces
Bibliography Project

- Expanding HST by identifying data by dataset in addition to the program ID
- HST search
- Integrating into Data Discovery Portal
  - [http://archive.stsci.edu/hst/bibliography](http://archive.stsci.edu/hst/bibliography)
Kepler

• Fraquelli will discuss Kepler Data Management Center work
• Kepler is archived in “DADS”.
  – New paradigm of large numbers of datasets/files requested at one time so DADS not as efficient for requests.
  – MAST creates tarfiles of data by category (e.g. all data in a quarter, all public Kepler Object of Interest (KOI) data)
• All public data are online
• Most distribution through tarfiles each approximately 44GB (compressed size) holding ~ 80 GB of data.
• October 2012 record month: 38 TB Kepler (uncompressed size)
• Total Kepler downloads since January: 228.7 TB (80 % of the total Kepler downloads)
SWIFT UVOT

- SWIFT UVOT data added October 2012
- Data complementary to GALEX data
- Worked with SWIFT UVOT team at Penn State
- Data retrieved from HEASARC (the primary archive for all SWIFT data)
WFC3 Persistence

The STScI WFC3 persistence team used a model and the time-history of earlier exposures to generate estimates of the amount of persistence. For each exposure, they produce fits files that contain estimates for each pixel in each "flt" file and a persistence-subtracted "flt" file. MAST is hosting these data.
HTML5/Canvas Spectral Plotter

- Replaced customized plot tool
Community Contributed High Level Science Products (HLSP)

Detailed Far-UV Spectral Atlas of O Main Sequence Stars - Smith

The Galaxy Halos, Outer disks, Substructure, Thick disks and Star clusters (GHOSTS) – de Jong

The Hubble Ultra Deep Field 2012 (HUDF12) - Ellis
Multi-Cycle Treasury Programs

- **CANDELS (Faber/Ferguson)**
  - 649 GB of data
  - > 25 TB distributed to 907 IP addresses
  - Citizen Science Initiative

- **CLASH (Postman)**
  - 160 GB of data
  - > 781 GB distributed to 738 IP addresses

- **PHAT (Dalcanton)**
  - 252 GB of data
  - > 1.5 TB distributed to 269 IP addresses
  - Citizen Science Initiative