



MAST
Users
Group
Meeting

Nov 26
2012

Introduction and Highlights

Rick White

Karen Levay



MAST
Users
Group
Meeting

Nov 26
2012

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.

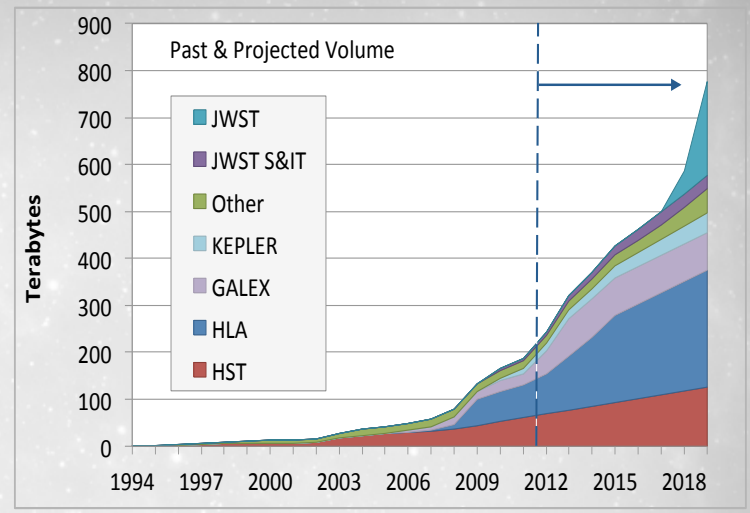
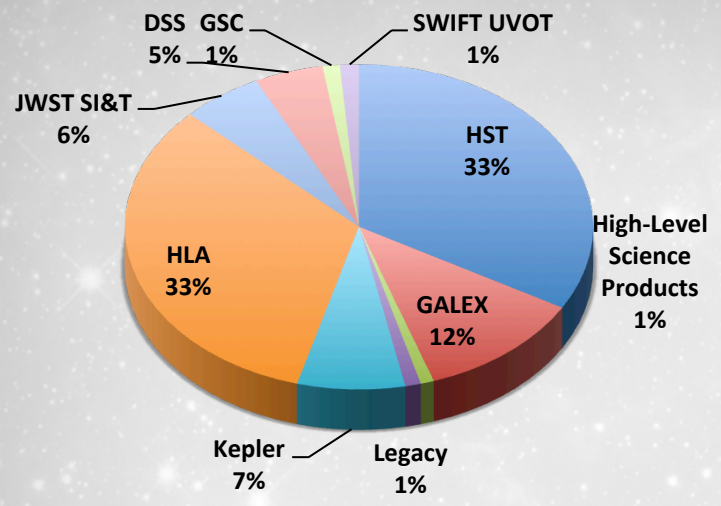




**MAST
Users
Group
Meeting**

**Nov 26
2012**

MAST Data & Growth



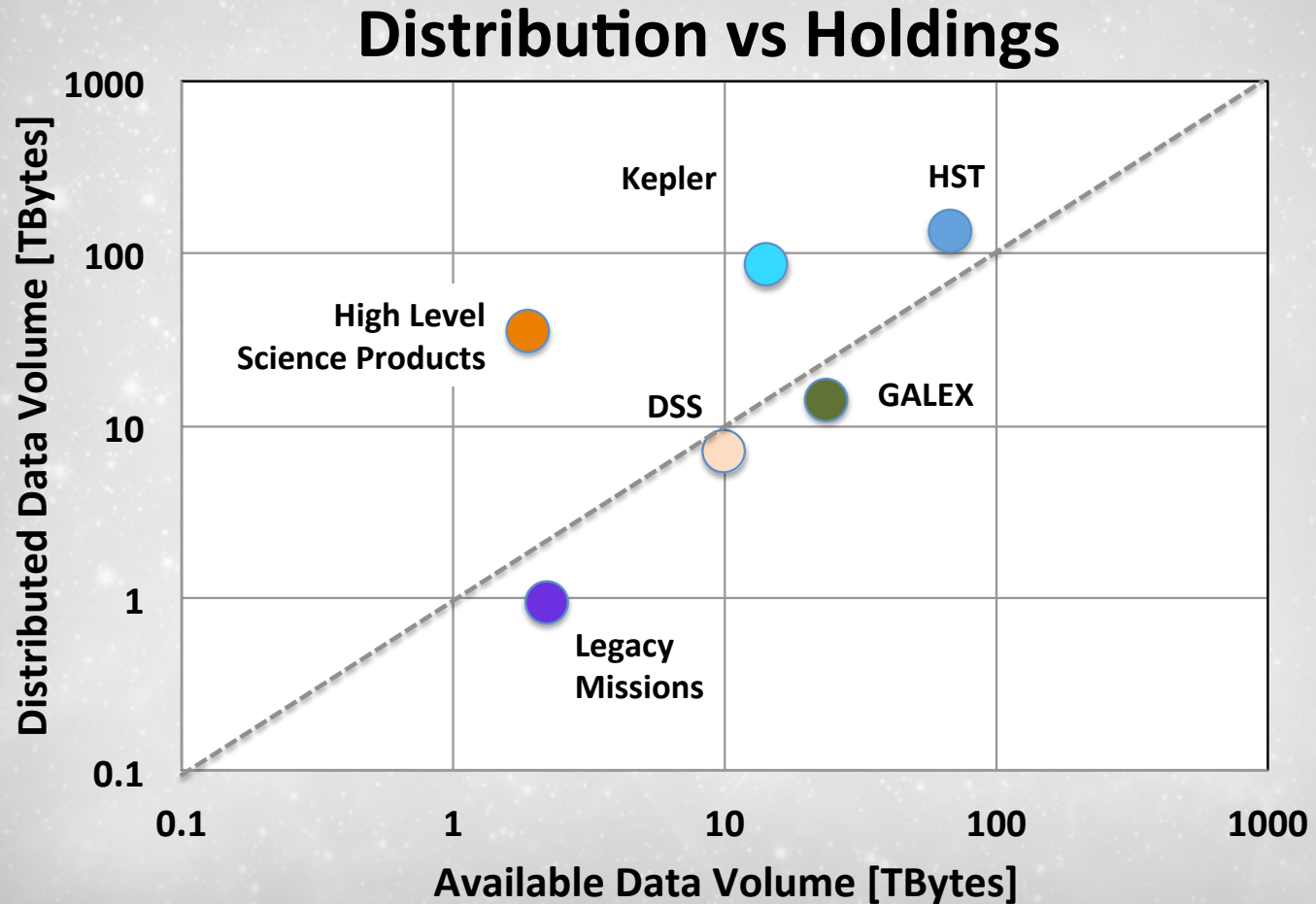
205.7 TB - Holdings Size as of Nov 1
3 TB / month – Average Ingest Rate per month
1,062,167 - Average # searches per month
16 TB – Average TB distributed per month



MAST
Users
Group
Meeting

Nov 26
2012

Distribution vs Holdings



Holdings as of Nov 1 2012
Distribution 2010 –2012

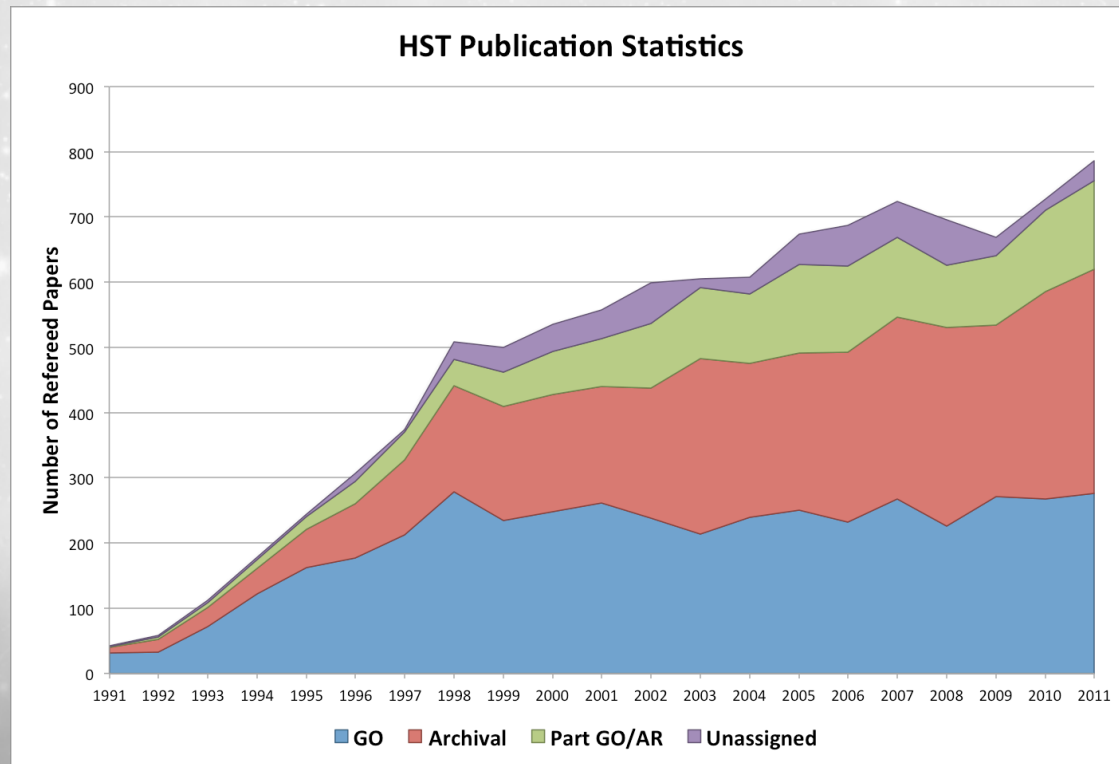


MAST
Users
Group
Meeting

Nov 26
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.





MAST
Users
Group
Meeting

Nov 26
2012

Archive Funding Sources

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



MAST Proposal for 2011 NASA
Data Archive Centers Senior Review



MAST
Users
Group
Meeting

Nov 26
2012

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



MAST
Users
Group
Meeting

Nov 26
2012

Staff Changes

- Departures
 - Alberto Conti
- Arrivals
 - Anton Koekemoer
 - Anastasia Alexov
- Pending Retirement
 - Myron Smith
- Pending Arrivals
 - Sahar Allam
 - Scott Fleming



MAST
Users
Group
Meeting

Nov 26
2012

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*

Select Collection:

All MAST Observations

Portal v1.5 (5570)... |

Examples: M101, 14.03.12.6 +54.20.56.7 r=0.2d, more...

Start Page | MAST: antennae

189 Total Rows | AstroView Controls | Display All | Color | | Export Table As... | Charts... | ARP 244 (RA: 12:01:53)

[RA] 12:02:14.960 [DEC] -18:43:08.727

Filters

Clear Filters Edit Facets... Help...

Filter All Record Fields

Selected

true
 false

Product Type

image (188 of 188)
 spectrum (1 of 1)

Mission

FUSE (1 of 1)
 GALEX (1 of 1)
 HLA (187 of 187)

Instrument

ACS/ACS/HRC (4 of 4)
 ACS/ACS/WFC (29 of 29)
 FLV (1 of 1)
 GALEX (1 of 1)
 WFC2/PC (76 of 76)
 WFC2/WFC2 (78 of 78)

Target Name

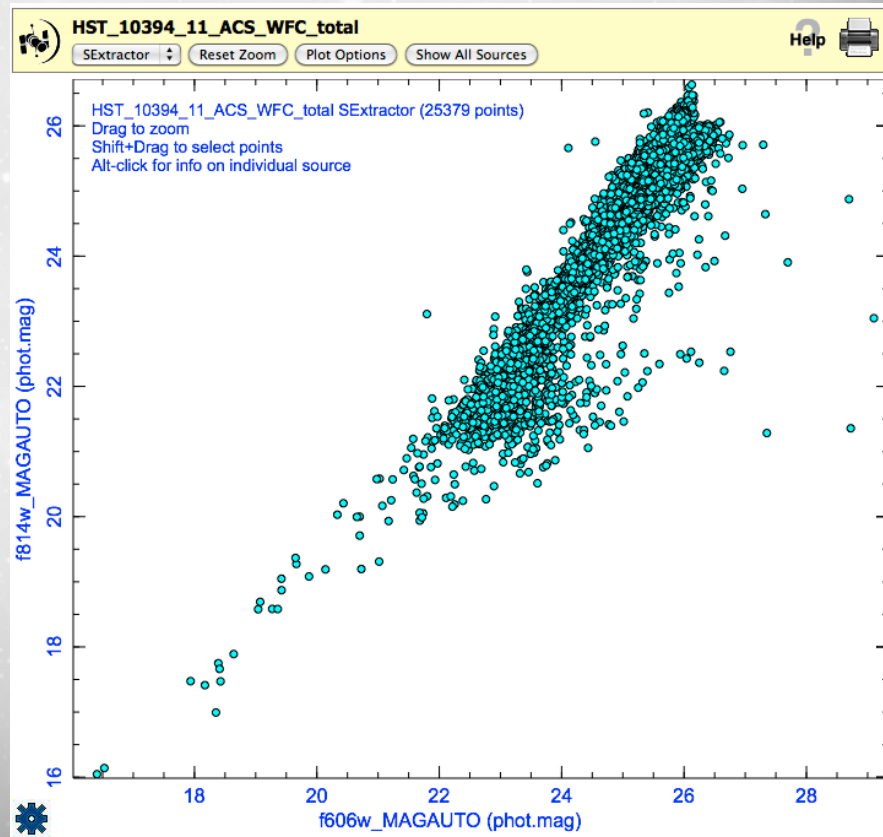
ANTENNAE (52 of 52)
 ANY (56 of 56)
 N4038+39-MIDDLE (5 of 5)
 N4038+39-OVERLAP-4 (2 of 2)
 N4038+39-S2 (2 of 2)
 NGA_Antennae (1 of 1)
 NGC4038 (14 of 14)
 NGC4038-120130-190100 (12 of 12)

Table View

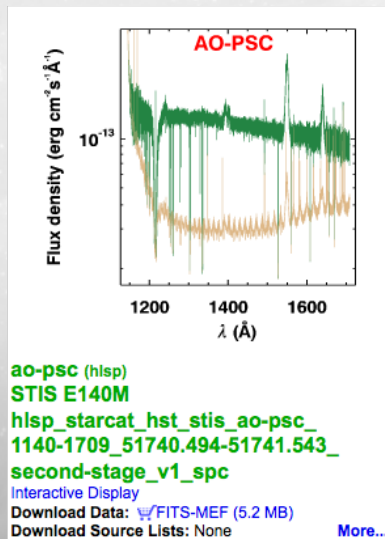
Preview	Instrument	Target Name
	WFC2/WFC2	NGC4038-STARG
	WFC2/WFC2	NGC4038
	WFC2/WFC2	ANTENNAE
	WFC2/WFC2	ANTENNAE
	WFC2/WFC2	ANTENNAE

MAST Portal

HLA Catalog Plotting Tool



HLSP Spectrum in HLA DR7



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/pubstat.html>
- <http://archive.stsci.edu/bibliography/>



MAST
Users
Group
Meeting

Nov 26
2012

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)



MAST
Users
Group
Meeting

Nov 26
2012

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)



Swift UVOT ultraviolet image of M33
13x13 arcmin



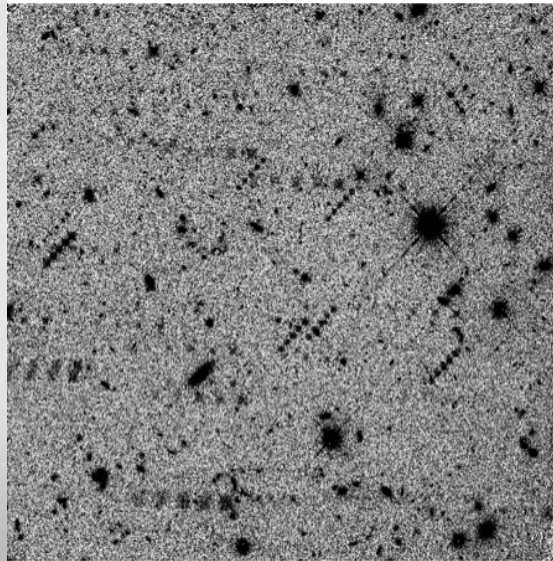
MAST
Users
Group
Meeting

Nov 26
2012

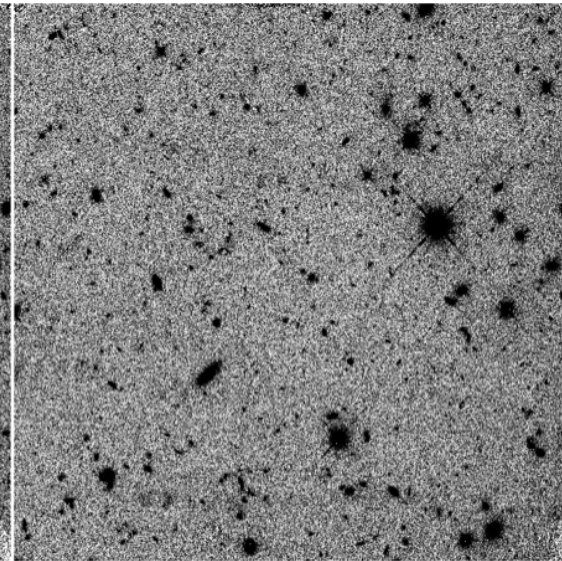
WFC3 Persistence

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.

Before correction

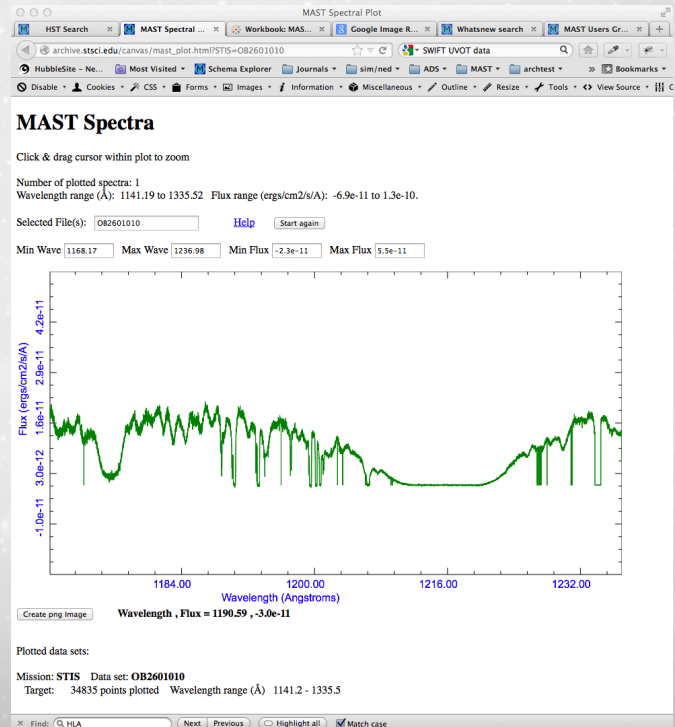
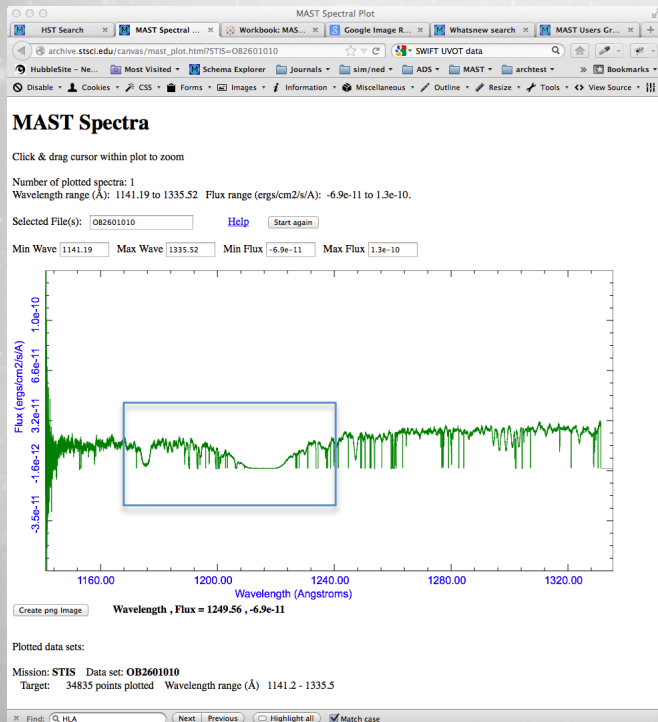


After correction



HTML5/Canvas Spectral Plotter

- Replaced customized plot tool



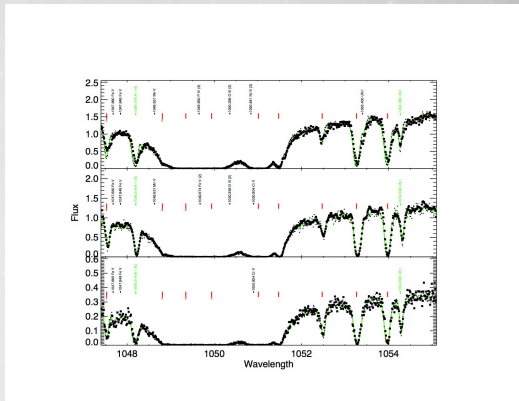


MAST
Users
Group
Meeting

Nov 26
2012

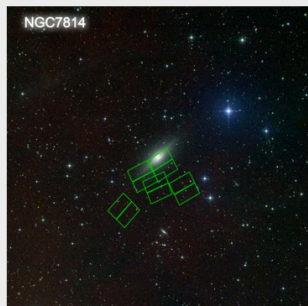
Community Contributed High Level Science Products (HLSP)

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

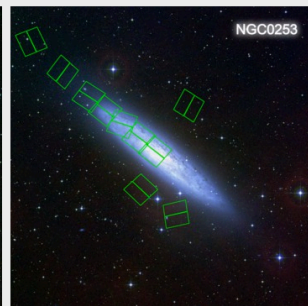


The GHOSTS Fields

Displayed below are the field positions of the GHOSTS galaxies. Click the images for further details and to access the associated data.



NGC7814
RA: 00h 03m 14.90s
Dec: +16d 08m 44.0s
D = 15.9 Mpc
B_T = 11.6 mag
V_{rot} = 231 km/s
Morphology = SA(s)ab



NGC0253
RA: 00h 47m 33.10s
Dec: -25d 17m 17.6s
D = 3.6 Mpc
B_T = 8.0 mag
V_{rot} = 194 km/s
Morphology = SAB(s)c

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



The Hubble Ultra Deep Field 2012 (HUDF12) - Ellis



MAST
Users
Group
Meeting

Nov 26
2012

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

