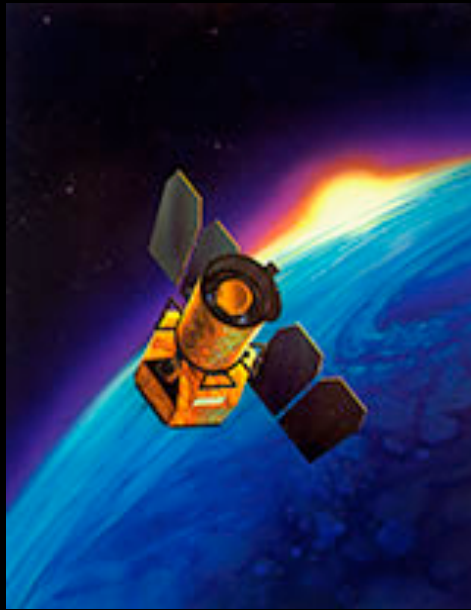
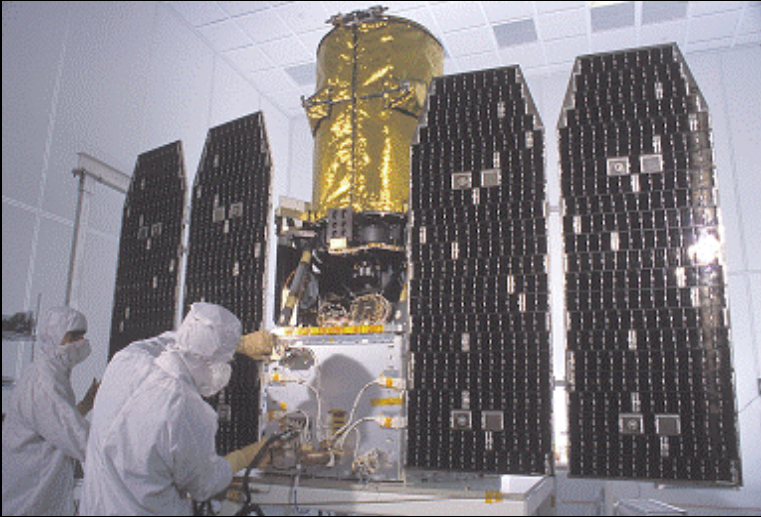


# Overview of Current and Forthcoming GALEX Search Capabilities and Data Products

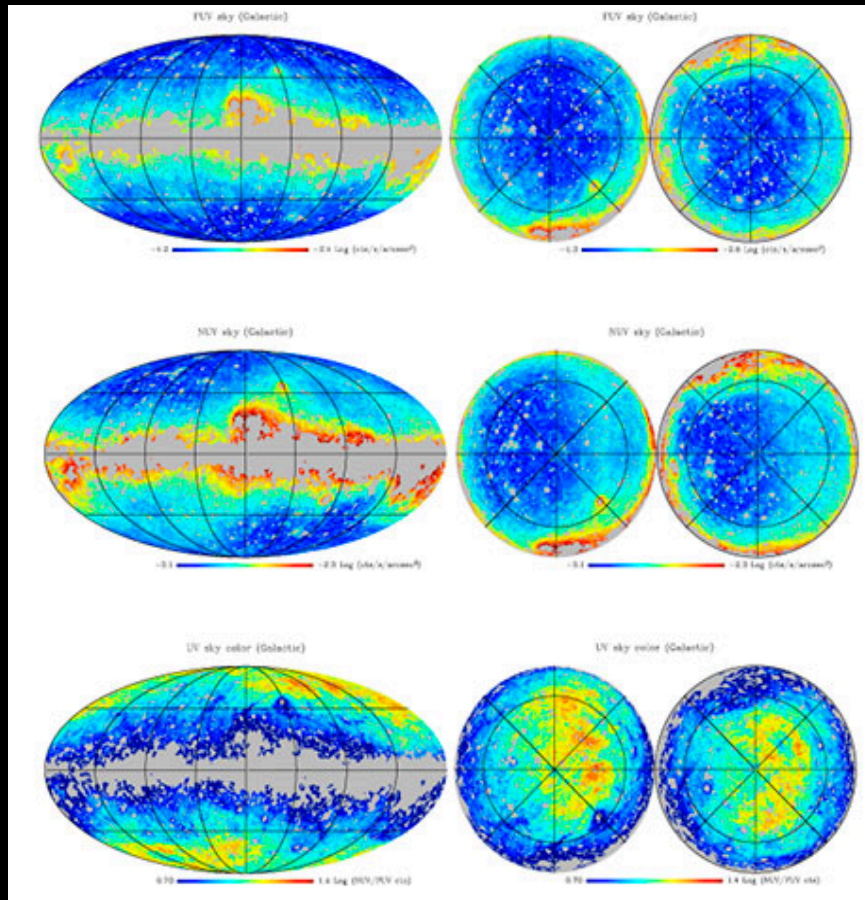


- Current Search Options
  - New GALEX Fluxes
    - gPhoton

# The GALEX Mission



- Originally planned to last 2.5 years, mission lasted 10 years and the spacecraft was “retired” just this past year.
- FUV and NUV camera, though FUV failed in June 2009.
- Wide variety of imaging surveys: All-Sky, Medium, Deep, Nearby Galaxy...+ guest investigations.
- Spectroscopic survey (Medium Spect. Survey)...+ guest investigations.
- Legacy surveys targeting special areas / targets after completion of Prime Mission.
- Data provided as image tiles (circular FoV) at a “visit” level, as well as “coadd” consisting of multiple visits at the same pointing.
- Associated catalog of FUV and NUV sources, but with duplicates.



# Discovery Portal

Select Collection: All MAST Observations Search: GOODS-S r=0.1d

Portal v1.6...

Examples: [M101](#), [14 03 12.6 +54 20 56.7 r=0.2d](#), [more...](#)

Start Page MAST: GOODS-S r=0.1d

Displaying 20 of 11200 Total Rows

NAME GOODS SOUTHERN FIELD Footprints: All

Filters

Clear Filters Edit Facets... Help...

All  Checked  Unchecked

Filter All Record Fields

Product Type

Order Values by Count

image (8549 of 8549)

spectrum (2651 of 2651)

Mission

Order Values by Count

GALEX (80 of 80)

HST (11024 of 11024)

SWIFT (96 of 96)

Instrument

Or

NICMOS/NIC3 (267 of 267)

STIS/CCD (2573 of 2573)

UVOT (96 of 96)

WFC3 (521 of 521)

WFC3/IR (1082 of 1082)

WFC3/UVIS (401 of 401)

WFC3

	Actions	Preview	Target Name	Instrument	Filters	Wave
1			CDFS_00_css2852	GALEX	NUV	UV
2			AIS_489_1_73	GALEX	FUV	UV
3			PS_CDFS_MOS00	GALEX	NUV	UV
			CDFS_10	GALEX	FUV	UV
5			CDFS_10	GALEX	NUV	UV

AstroView

03:37:40.358 -28:49:57.361 RA DEC  
03:32:28.008 -27:48:29.880 hhmms/deg

Many GALEX GI and Legacy Programs were conducted in parallel, or subsequent to, large HST programs.

masttest.stsci.edu/portal/Mashup/Clients/Mast/Portal.html#

# Incoming Data – GCAT + Bianchi Catalogs

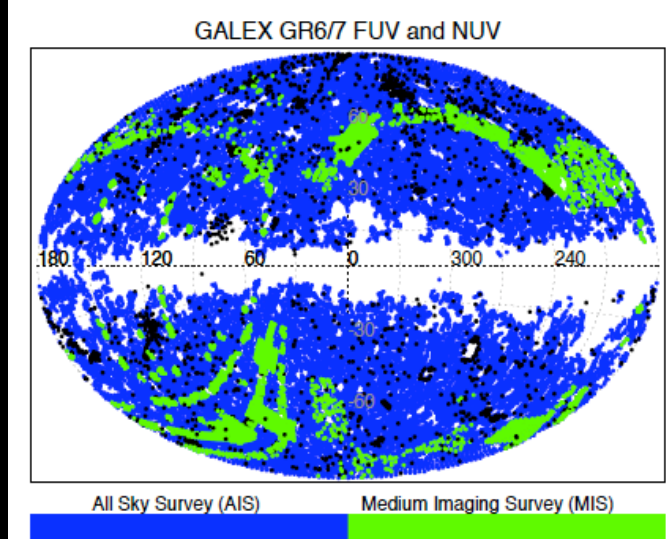
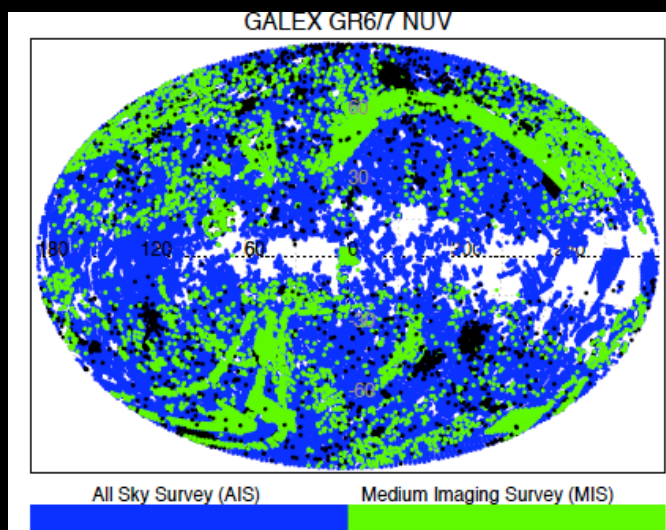
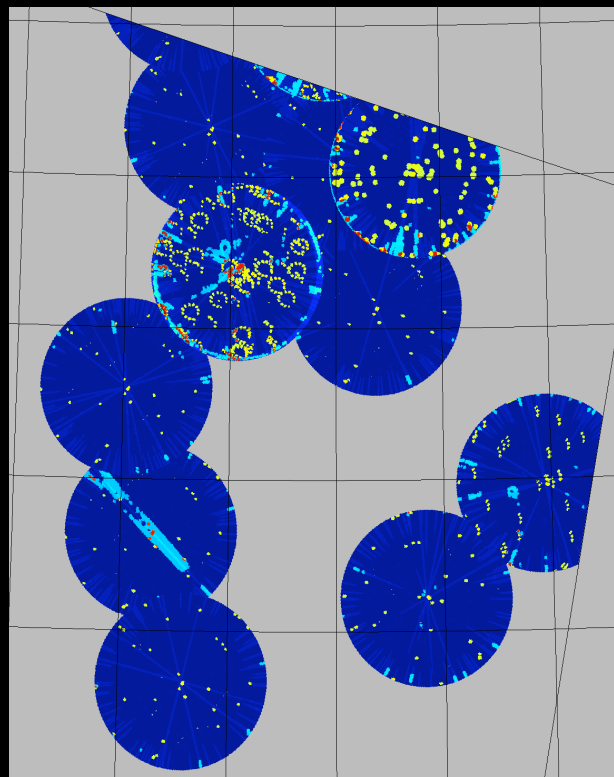
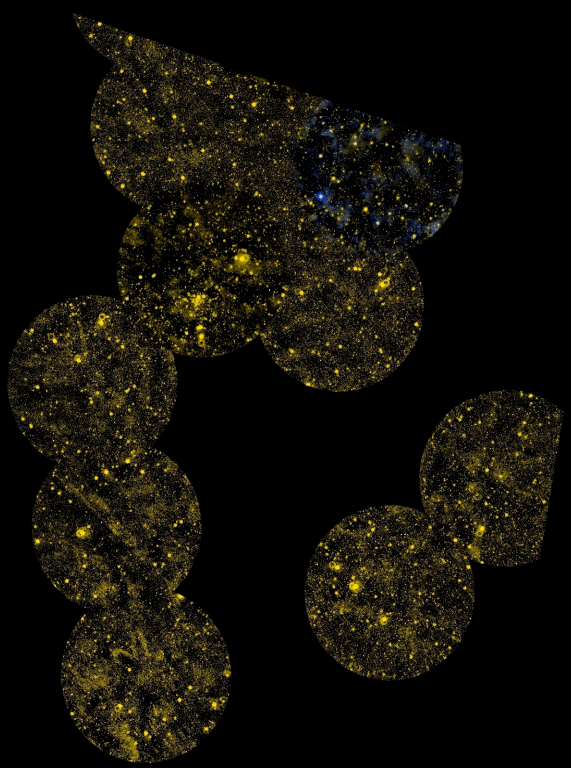
## GCAT (Seibert et al.)

- AIS and MIS version through GR6
- Kepler-field-only version including GR7
- NUV-defined, FUV measured using NUV positions and apertures

## Bianchi et al. Catalog

- Includes all AIS and MIS tiles through GR7 (end of 2012)
- Sources cross-matched with SDSS DR9, GSC-II, PanSTARRS, 2MASS

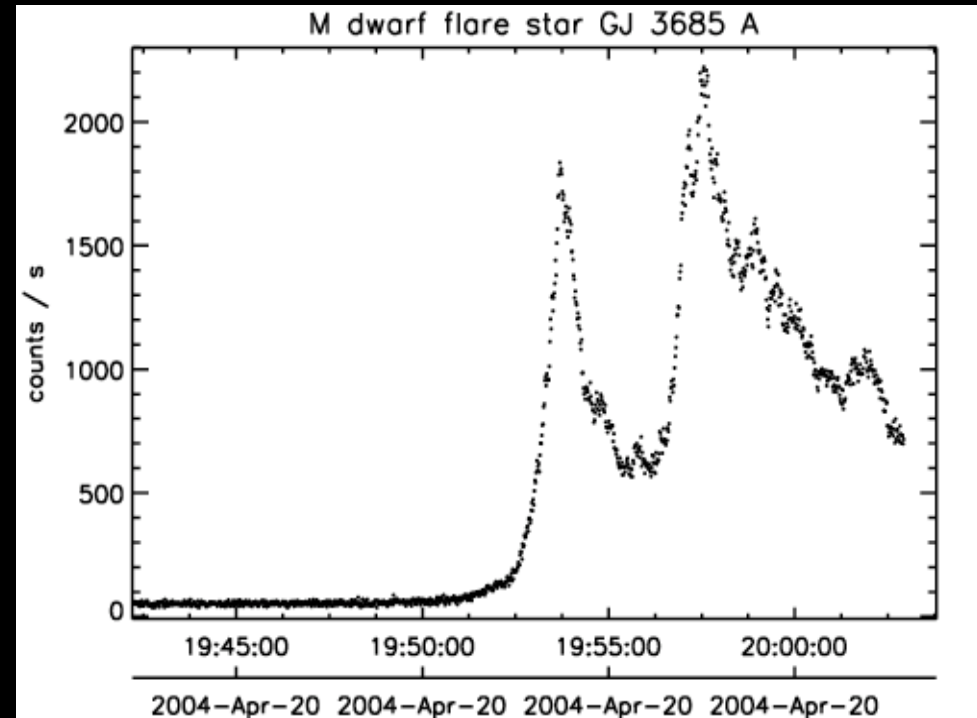
GASC and GMSC Sky Coverage			
Survey	Exposure Time (seconds)	Sky Coverage (deg <sup>2</sup> )	Depth (m <sub>AB</sub> )
GASC	~100 (up to 800)	27,000	20.5
GMSC	1,000-10,000	5,000	23.5



# Incoming Data - gPhoton

## gPhoton

- Time-tagged database of every photon observed with GALEX (~1.5 trillion photons).
- Python-based package + web interface.
- Users can create lightcurves, movies, stacked intensity maps, using any set of photons.
- User-defined coordinates, apertures, time resolution.
- New science areas: transients, high-time-resolution variability, concurrence with other missions.
- Can do science in two modes: Look at gPhoton data from lists of known objects, or animate a patch of sky and see what's there!
- Beta testing is available now! Contact Chase Million at [chase.million@gmail.com](mailto:chase.million@gmail.com)



Flare Star GJ 3685 A - GALEX gPhoton  
Note: Astrometric wobble corrected in latest version.

# Progress on Past MUG Comments

*“The highest priority MUG request: Availability of GALEX data and quality assurance needs to be ascertained for the post-NASA period. This action may require interceding by the Program Scientist and Program Executive at NASA HQ .”*

- All “normal” data up to and including the CalTech era have been released to the public as GR7.
- All of the new “scan-mode” data have been delivered to MAST, but the GALEX team was never able to adjust their pipeline to fully process those data at a level they are comfortable with. There are no plans for them to work on this further in the future.
- For the scan-mode data, therefore, we effectively have a “raw” version of the data. We want to release these to the public, but need to think about where and how best to serve it out.
- There is also some proprietary data from the CalTech observing season that can not be released until that proprietary data lapses. We have the data, but do not yet have exact dates on when each program’s data can be made public.

# The Future

- Integration with the Portal, especially, how do we maintain the legacy of GalexView? GALEX users have been using same access points for years, need to ensure transition is as enticing and smooth as possible.
- gPhoton: How to make it a tool that people will want to use? Arguably the GALEX spacecraft's lasting legacy researchers can use for years to come.
- Besides HST, there are no new UV missions on the horizon (GALEX is the last and greatest). How can we make sure the archive can support the UV community while also helping them plan for the next big thing?
- *What are some of the important topics to discuss from your perspective? UV legacy? Complements to current and future missions? Data access / discoverability? Tools that are missing?*

# Supplemental Slides – Please Review



# “Classic” MAST Search Form / GalexView

Barbara A. MIKULSKI ARCHIVE OF THE SPACE TELESCOPES

MAST STScI Tools Mission Search Tutorial Site Search Follow Us

GALEX GR6/GR7 Home About GALEX Getting Started GalexView CASJobs

## GALEX Catalog Search [\(Help\)](#)

Public GI data will also be searched

**Object Name**

**Resolver** NED

**Radius (arcmin)** 3.0

**Right Ascension**

**Declination**

**Equinox** J2000

**User-specified Field**

**Field Constraint**

**Sort By**

**Output Columns**

IAU Name  Up

RA (J2000)

Dec (J2000)

Band

Magnitude

Flux

E(B-V)

IsThereSpectrum

FWHM

Down

Remove

Reset

**Sort By**

FUV Magnitude   Reverse

NUV Magnitude   Reverse

E(B-V)   Reverse

**Output Format**

HTML

Top of Page Copyright Suggestions Email Us Printer Friendly Page Contacts Last Modified Date: 8/28/2013 10:53:27 AM

m101 resolved by NED: [210.8023, 54.3490] r=0.05d (default) Release: GR6/GR7 02/27/13: MORE GR6 and NEW GR7

m101 Search Cancel Product: Objects Tiles

Examples: M101 14 03 12.6 +54 20 56.7 r=0... more... Upload... Advanced... Survey: ALL ck/Questions ?

Search History Clear

Searches

[210.8023, 54.3490] r=0.05d (default) [0]

Objects

GI3\_050008\_NGC5457

Display Image Display Objects Display Graphics

Full Resolution AIS MIS GII DIS NGS Other

GALEX Catalog Search

Double click an object to display its properties

Objects

Results 1 - 25 of [92 Total] Showing: 25 Per Page Filter Save As

Download	objID	survey	specObjID	distance_arcmin	fov_radius	IAUName
<input type="button" value="Download"/>	3116774753645374063	GII	0	0.041797280119302872	0.0151459826	GALEX J140312.6+542053
<input type="button" value="Download"/>	3116774753645374062	GII	0	0.33118928109425616	0.0166098047	GALEX J140310.2+542057
<input type="button" value="Download"/>	3116774753645374286	GII	0	0.49934162107538815	0.00676444126	GALEX J140312.7+542126
<input type="button" value="Download"/>	3116774753644336471	GII	0	0.52471647324998549	0.0117795067	GALEX J140310.3+542121
<input type="button" value="Download"/>	3116774753645371916	GII	0	0.56510907701000013	0.0238430966	GALEX J140310.5+542027
<input type="button" value="Download"/>	3116774753645374171	GII	0	0.68097550689867858	0.0183865372	GALEX J140317.0+542045
<input type="button" value="Download"/>	6374469411428893127	AIS	0	0.80558819615186972	0.232233956	GALEX J140318.0+542055
<input type="button" value="Download"/>	3116774753645374093	GII	0	0.82733103671119435	0.0282223448	GALEX J140312.2+542006

Number of Bins 10 Bin Size

MAST Search Form – Not used heavily: <http://galex.stsci.edu/GR6/?page=mastform>

GalexView: An ancestor of the Discovery Portal? Used by a significant fraction of the GALEX community. Includes download basket, data overlays, filtering. Similar to HLA in behavior and design, but specific to GALEX. <http://galex.stsci.edu/GalexView/>

# GALEX CasJobs: SQL Access To Tables

MAST Query / CasJobs

Help Tools Query History MyDB Import Groups Output Profile Admin Logout scfleming

News

## GALEX

**Users:** You can search on keywords across the various GALEX tables (columns, descriptions) using our Schema Browser.

### Recent News

**Feb. 2013**

**MORE GR6 and NEW GR7 Data Now Available.**  
More information can be found on MAST's GALEX GR6/7 main page. **Note:** Newer data include ghost flags which may produce pixels with zero flux in some images. See Section 5 in the **GR7 Pipeline Description** for details.

This site is currently running CasJobs v3\_5\_16. To see the list of changes in the test version, please see the **Change Log**.

CasJobs is an online workbench for large scientific catalogs, designed to emulate and enhance local free-form query access in a web environment.

Some features of this application include...

- Both synchronous and asynchronous query execution, in the form of 'quick' and 'long' jobs.
- A query 'History' that records queries and their status.
- A server-side, personalized user database, called 'MyDB', enabling persistent table/function/procedure creation.
- Data sharing between users, via the 'Groups' mechanism.
- Data download, via MyDB table extraction, in various formats.
- Multiple interface options, including a browser client as well as a java-based command line tool.

The web interface for CasJobs is fully compatible with recent versions of the following browsers:

- Internet Explorer
- FireFox

CasJobs is partially compatible with recent versions of the following browsers:

- Mozilla
- Opera
- Safari

For more information, try the CasJobs **FAQ**, or **guide**. Or, to get started right away, either **login** or **create** an account.

**Contact MAST**  
CASJobs is made possible by the **Sloan Digital Sky Survey Collaboration**  
\$Name: v3\_5\_16 \$ , \$Revision: 1.31 \$ , Last modified: Wednesday, November 28, 2007 at 1:44:48 PM

<http://galex.stsci.edu/casjobs/>

Like Kepler CasJobs, allows for powerful queries on both the tile-level and source-level tables.

This resource is currently used more effectively by the GALEX community than the Kepler community.

GALEX CasJobs includes a Schema Browser, allowing users to search for keywords in table columns and descriptions.

Both Kepler and GALEX tables can be accessed with MAST CasJobs. The two different URLs simply point to different Intro Pages at the front end.