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Meeting

Dec 2,
2014

Highlights of New and Recent High-Level Science Products (HLSPs)

<http://archive.stsci.edu/hlsp>

- 1 – HST-imaging HLSP's: Anton Koekemoer
- 2 – non-HST-imaging HLSP's: Scott Fleming



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1. HST Imaging HLSP's

- Frontier Fields (PI: J. Lotz, M. Mountain)
- HST 24th Anniversary (PI: Z. Levay)
- CANDELS (PI: S. Faber, H. Ferguson)
- CLASH (PI: M. Postman)
- PHAT (PI: J. Dalcanton)
- BoRG (PI: M. Trenti)



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Frontier Fields

<http://archive.stsci.edu/prepds/frontier>

- 4 (or 6) clusters, each with parallel field
- each observed with 3 ACS, 4 WFC3 filters
- total 140 orbits each cluster (and parallel)
- Cumulative v0.5 releases during each epoch
- 1st year complete:
 - Abell 2744 (9x v0.5 releases + 2x v1.0 releases)
 - MACS0416 (8x v0.5 releases + 2x v1.0 releases)
- 2nd year in progress:
 - MACS0717 (2x v0.5 releases, v1.0 in progress)
 - MACS1149 (one v0.5 release to date)



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Frontier Fields: Abell 2744

<http://archive.stsci.edu/prepds/frontier/abell2744.html>

Abell 2744 main cluster and parallel field
(full depth: 140 orbits ACS+WFC3 on each field)





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Frontier Fields: MACS0416

<http://archive.stsci.edu/prepds/frontier/macs0416.html>

MACS 0416 main cluster and parallel field
(full depth: 140 orbits ACS+WFC3 on each field)





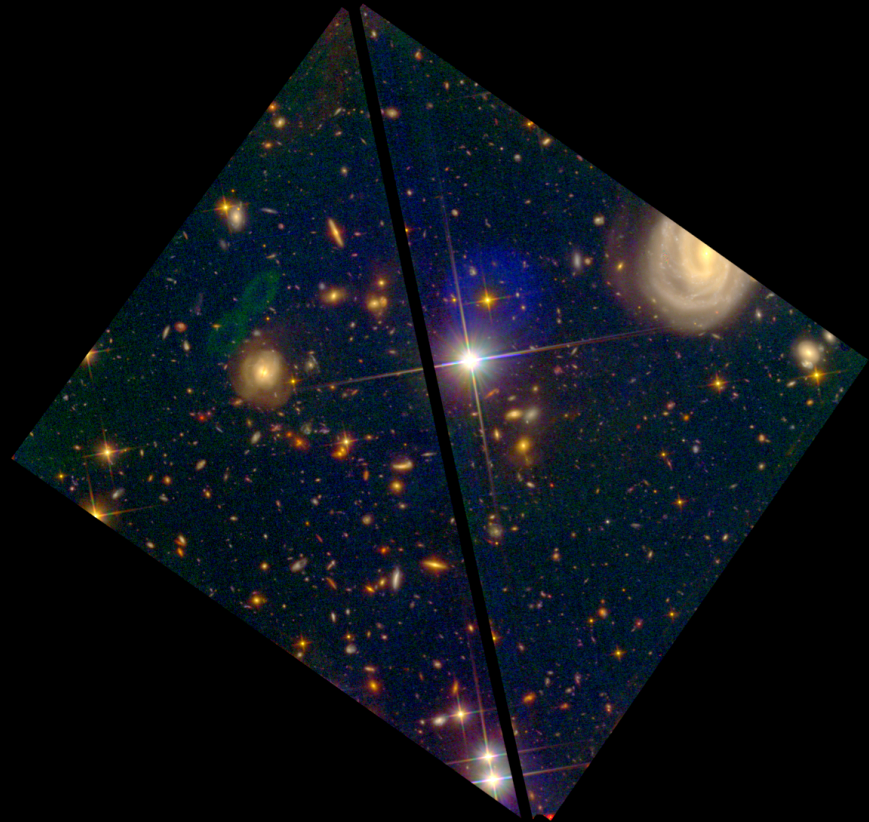
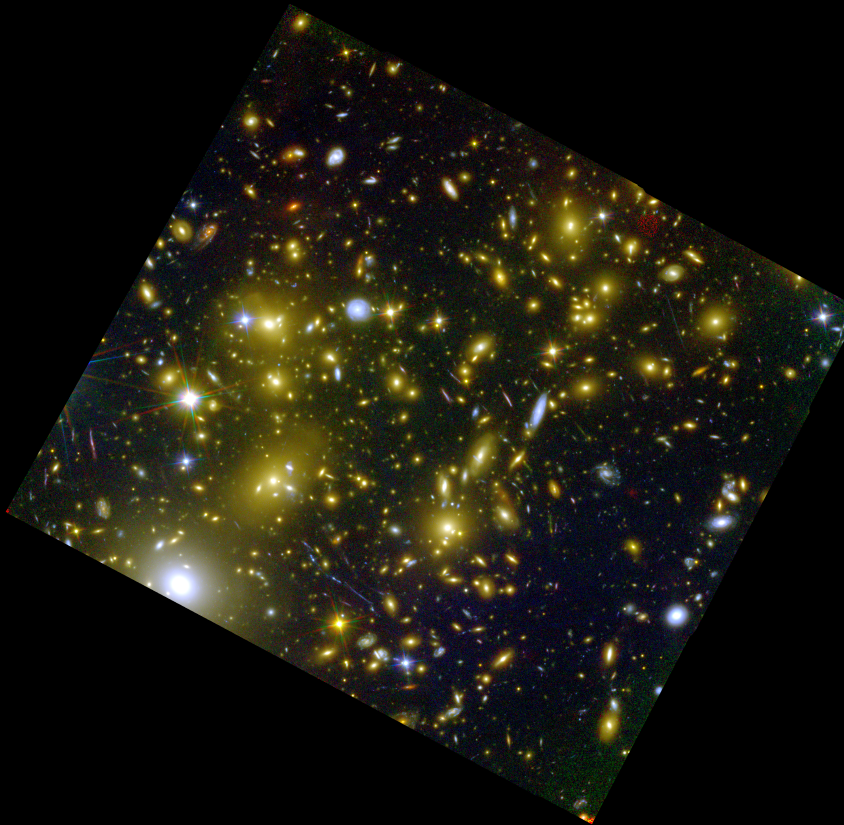
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Frontier Fields: MACS 0717

<http://archive.stsci.edu/prepds/frontier/macs0717.html>

MACS 0717 main cluster and parallel field
(in progress: 70 orbits ACS on main cluster +
70 orbits WFC3/IR on parallel field)



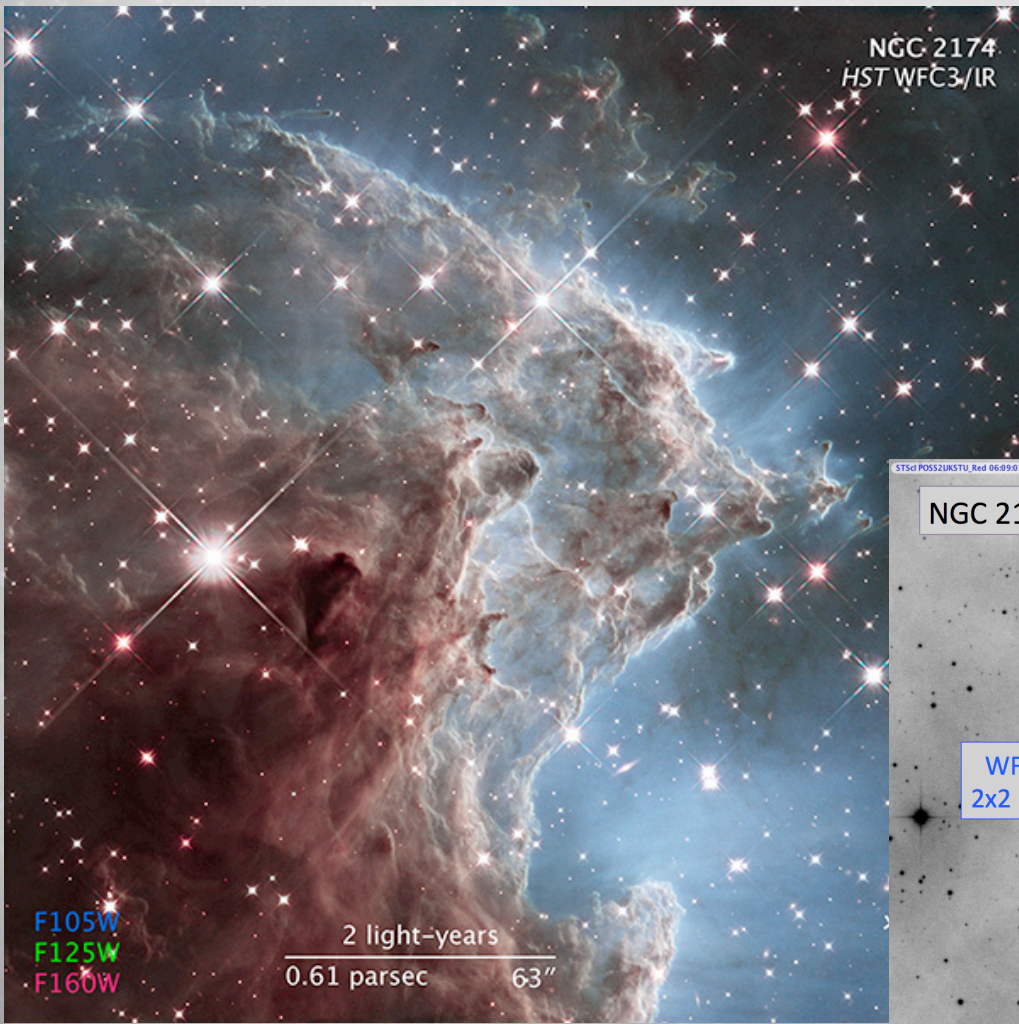


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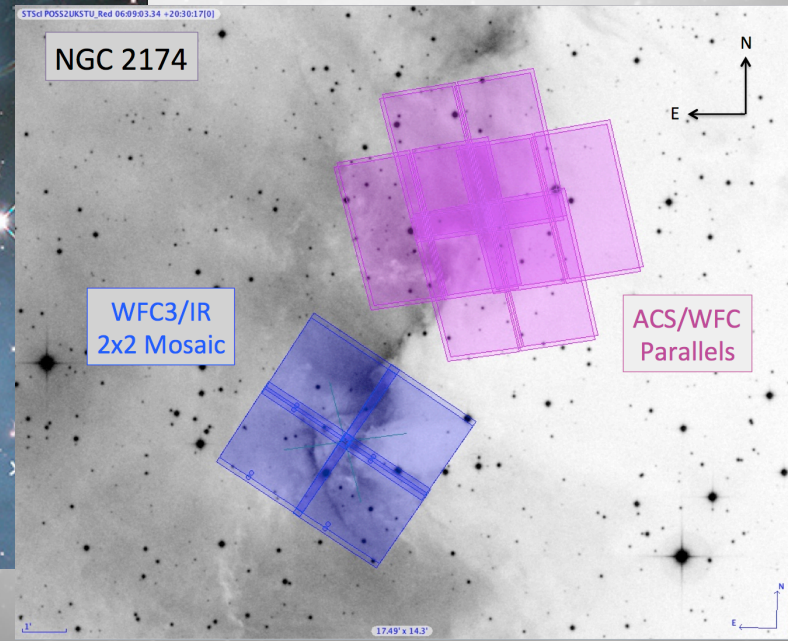
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HST 24th Anniversary

<http://archive.stsci.edu/prepds/heritage/ngc2174>



3-band WFC3/IR coverage (F105W, F125W, F160W) + ACS parallels





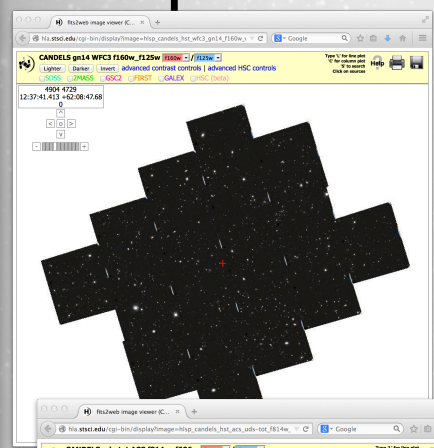
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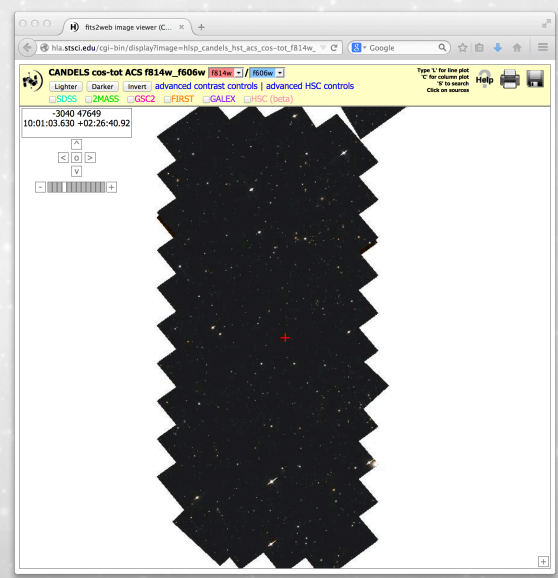
CANDELS

<http://archive.stsci.edu/prepds/candels>

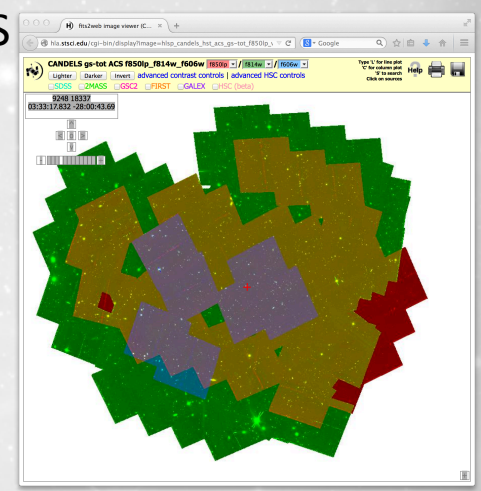
- All 5 fields complete; mosaics delivered for all epochs; final mosaic was GOODS-N epoch 14



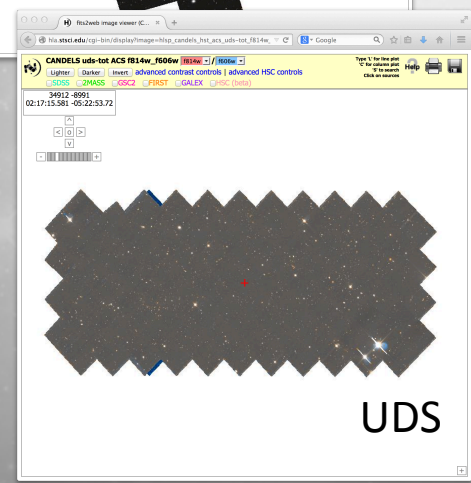
GOODS-N



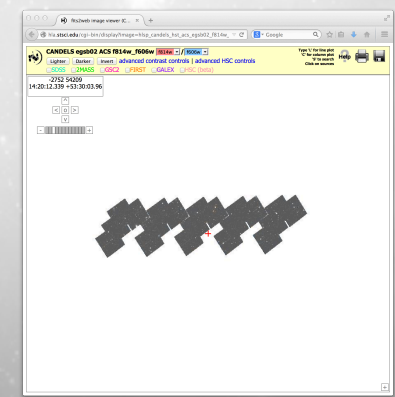
COSMOS



GOODS-S



UDS



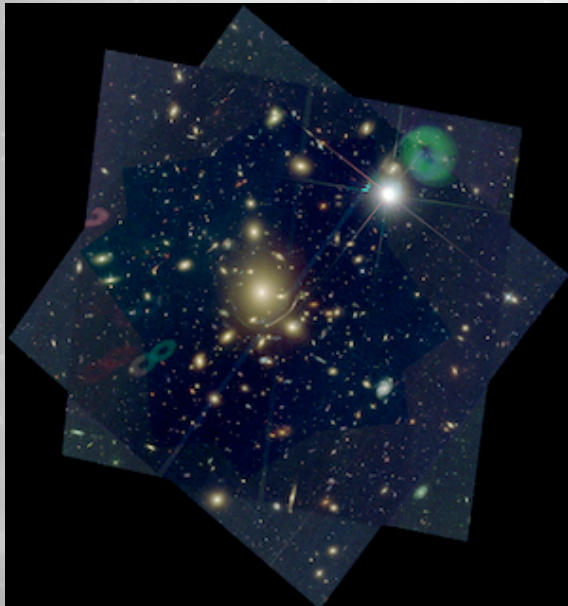
EGS



CLASH

<http://archive.stsci.edu/prepds/clash>

- All 25 clusters complete (15 HST bands each)
- All HST mosaics delivered; Subaru images and catalogs also being delivered



Cluster Name (click to sort)	Redshift (click to sort)	Data Files* (30mas,65mas = HST)			Interactive Displays	Catalogs		Models
Abell 1423	0.213	30mas	65mas	Subaru	View Images	HST	Subaru	Models
Abell 209	0.206	30mas	65mas	Subaru	View Images	HST	Subaru	Models
Abell 2261	0.224	30mas	65mas	Subaru	View Images	HST	Subaru	Models
Abell 383	0.187	30mas	65mas	Subaru	View Images	HST	Subaru	Models
Abell 611	0.288	30mas	65mas	Subaru	View Images	HST	Subaru	Models
CLJ1226+3332	0.890	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ0329-02	0.450	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ0416-24	0.396	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ0429-02	0.399	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ0647+70	0.584	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ0717+37	0.548	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ0744+39	0.686	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ1115+01	0.352	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ1149+22	0.544	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ1206-08	0.440	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ1311-03	0.494	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ1423+24	0.545	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ1720+35	0.391	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ1931-26	0.352	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MACSJ2129-07	0.570	30mas	65mas	Subaru	View Images	HST	Subaru	Models
MS 2137.3-2353	0.313	30mas	65mas	Subaru	View Images	HST	Subaru	Models
RXJ1347-1145	0.451	30mas	65mas	Subaru	View Images	HST	Subaru	Models
RXJ1532.9+3021	0.345	30mas	65mas	Subaru	View Images	HST	Subaru	None †
RXJ2129+0005	0.234	30mas	65mas	Subaru	View Images	HST	Subaru	Models
RXJ2248-4431	0.348	30mas	65mas	Subaru	View Images	HST	Subaru	Models

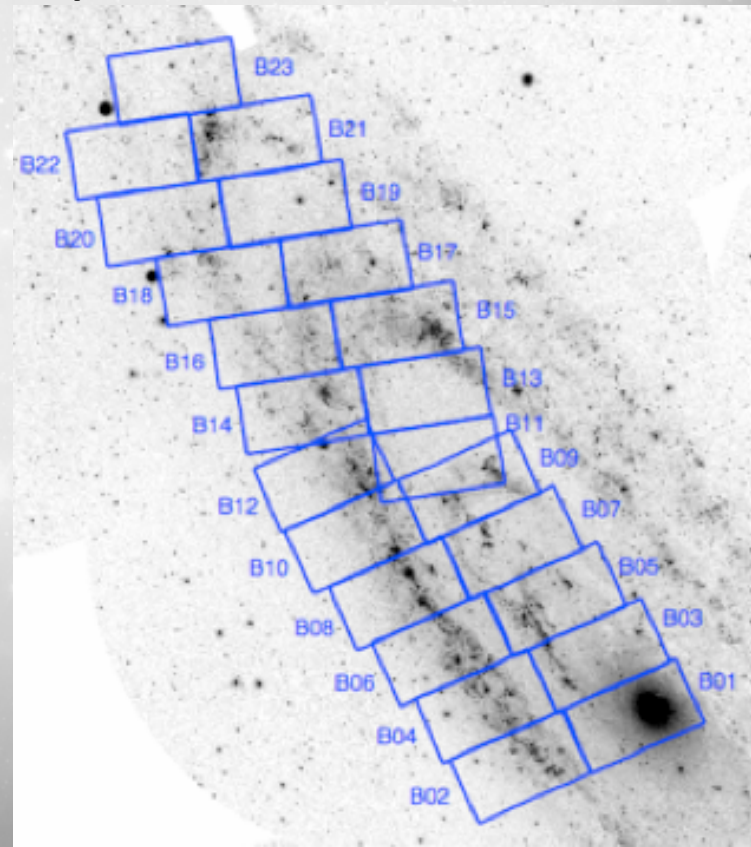
PHAT

<http://archive.stsci.edu/prepds/phat>

- F275W+F336W (WFC3/UVIS),
- F475W+F814W (ACS/WFC),
- F110W+F160W (WFC3/IR)

- All 23 bricks complete and delivered / released

- v2.0 photometry catalogs released





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BoRG

<http://archive.stsci.edu/prepds/borg>

- ACS+WFC3 imaging of parallel fields in 4 filters: F606W, F098M, F125W, F160W
- 29 new fields added in April 2014
- 71 fields released in total
- typical depth 1-3 orbits per field (depending on filter mix)





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HLSP

(Part 2 – non-HST-image HLSP)

Frontier Field Lens Models

GCAT

BCSCAT

COS IGN Survey

All-Sky GALEX UV Emission Maps

UV Linelist of White Dwarf G191-B2B

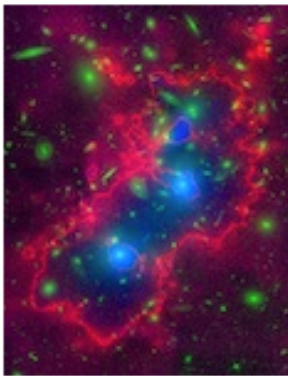
HST Moving Target Re-processed Images

Scott Fleming

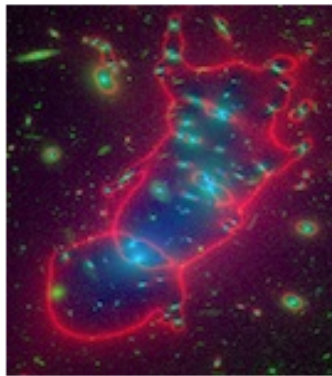
Frontier Fields Lens Models

<http://archive.stsci.edu/prepds/frontier/lensmodels/>

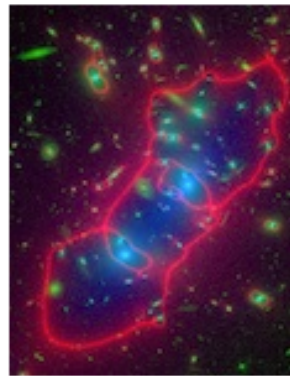
Abell 2744: Overlay of magnification (red) and mass models (blue) on the full-band HST imaging (green)



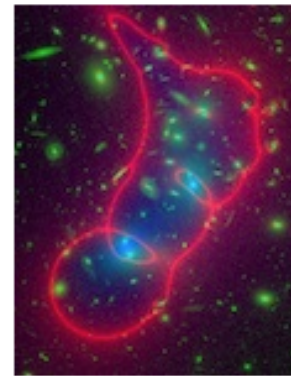
Bradač et al.



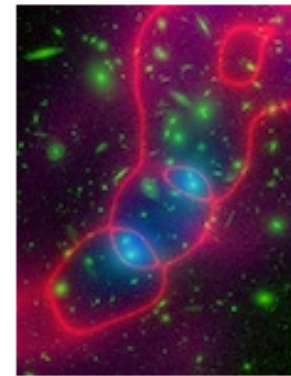
CATS Team



Merten, Zitrin et al.



Sharon et al.



Williams et al.

- Models from 5 independent teams released prior to FF observations – important results comparing FF data with the (pre-FF) models.
- HLSP page includes Interactive Displays for model maps, lens tool calculator written by Dan Coe.
- New models include first external team (GLAFIC) and first models that include data obs. during FF.

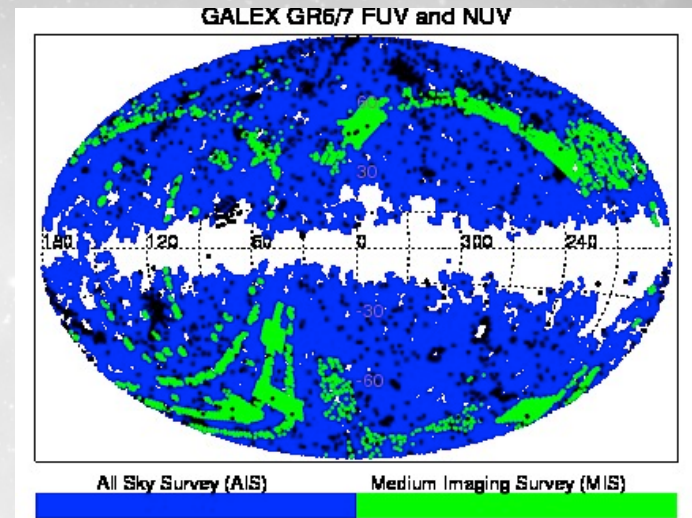
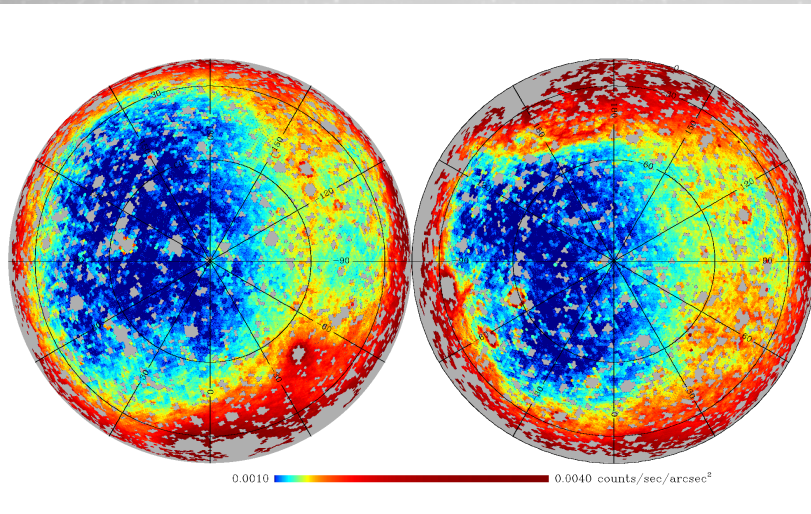


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GALEX Unique Source Catalogs

<http://archive.stsci.edu/prepds/{gcat, bcscat}>



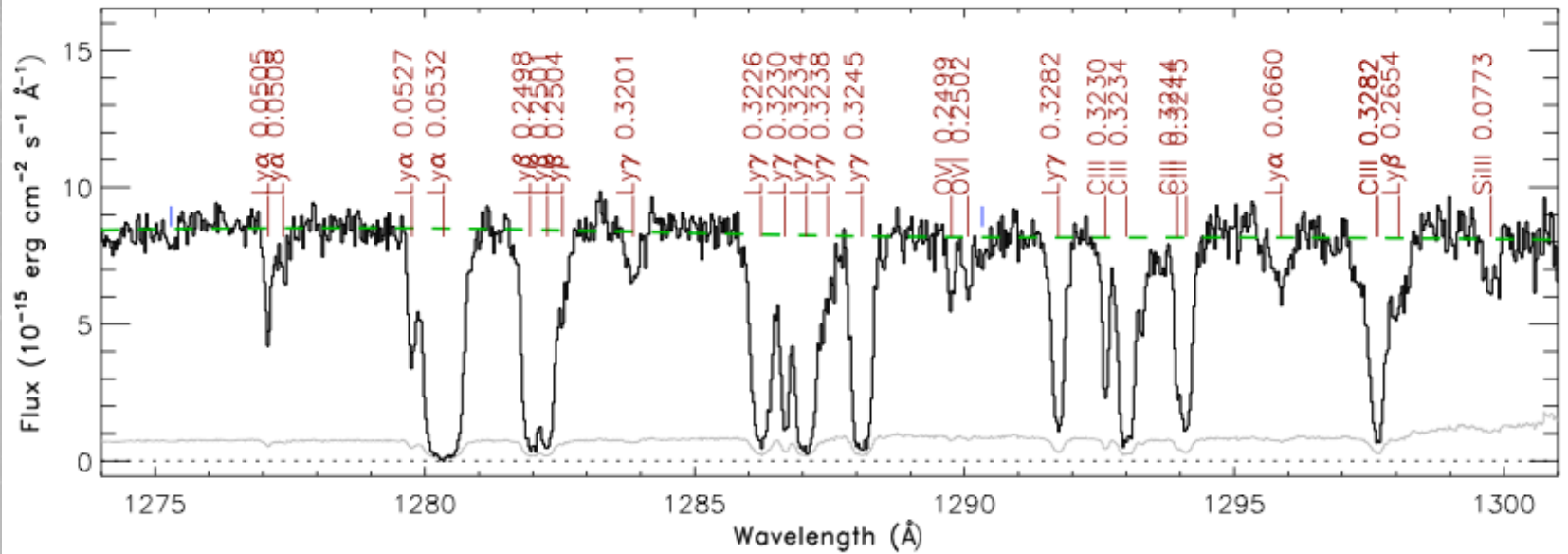
- GCAT (Seibert et al.)
- AIS, MIS -> GR6
- GR7 in Kepler area
- NUV-based catalog
- $S:N_{\text{NUV}} > 3$
- “best” (deepest) obs. for a source
- BCSCAT (Bianchi, Conti, & Shiao, 2014 *AdSpR*, 53, 900)
- AIS, MIS -> GR7
- Must have at least one obs. when FUV +NUV detectors on

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COS Survey of IGM

<http://archive.stsci.edu/prepds/igm/>



- Coadd spectra of 75 bright AGN (Danforth et al.)
- Spectral features identified semi-automatically
- Galactic (MW) and intergalactic (redshifted) features from multiple species
- >2,500 redshifted IGM systems at $z < 0.723$
- Spectra, linelists, preview plots (above)

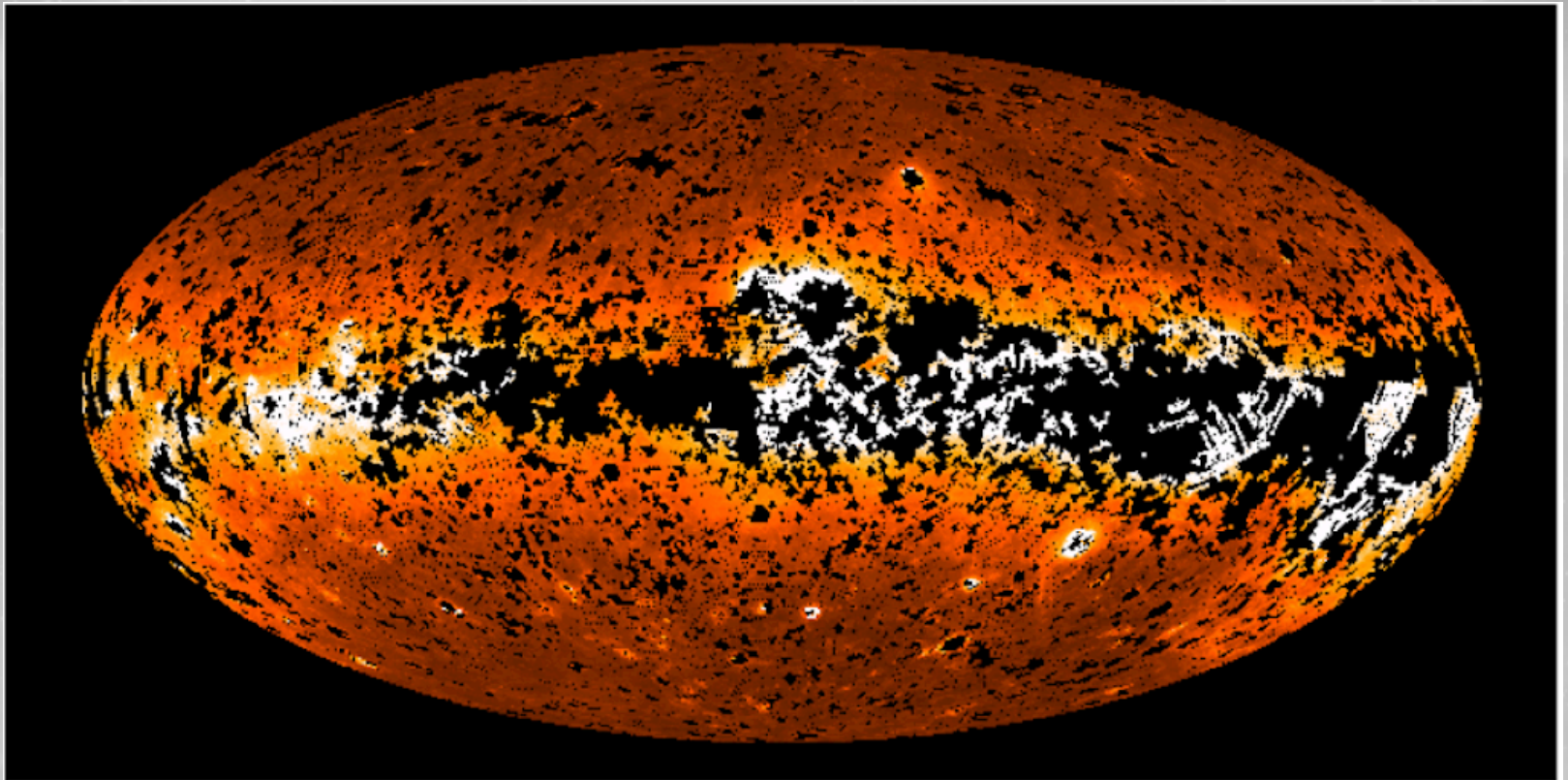


GALEX UV Emission Maps

<http://archive.stsci.edu/prepds/uv-bkgd/>

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- Maps of diffuse emission (GR7, J. Murthy)
- Geocoronal and zodiacal components
- 2 arcminute resolution, includes 100 micron map
- FITS projections, CasJobs tables, telemetry

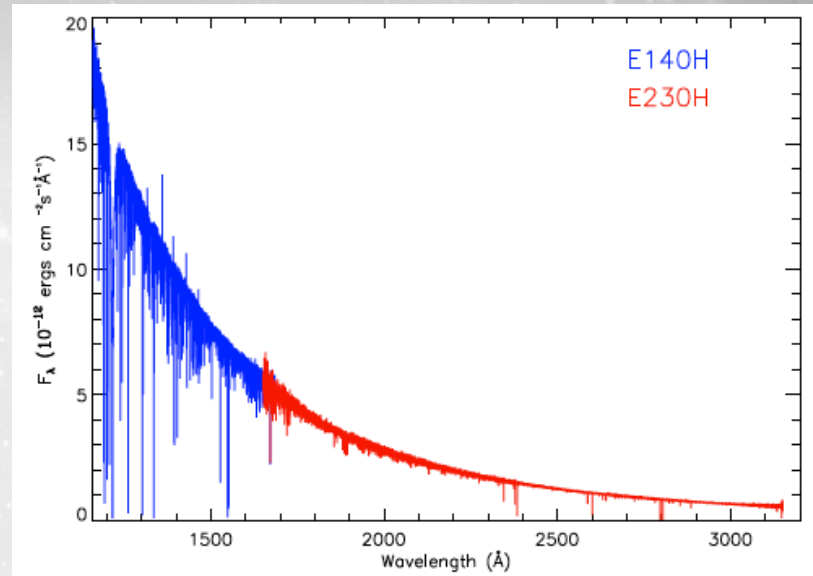
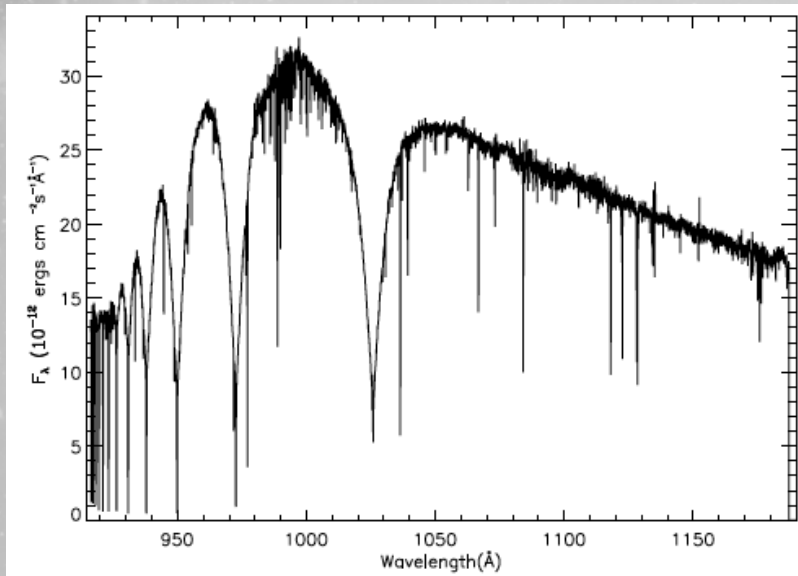


UV Linelist of a White Dwarf

<http://archive.stsci.edu/prepds/wd-linelist/>

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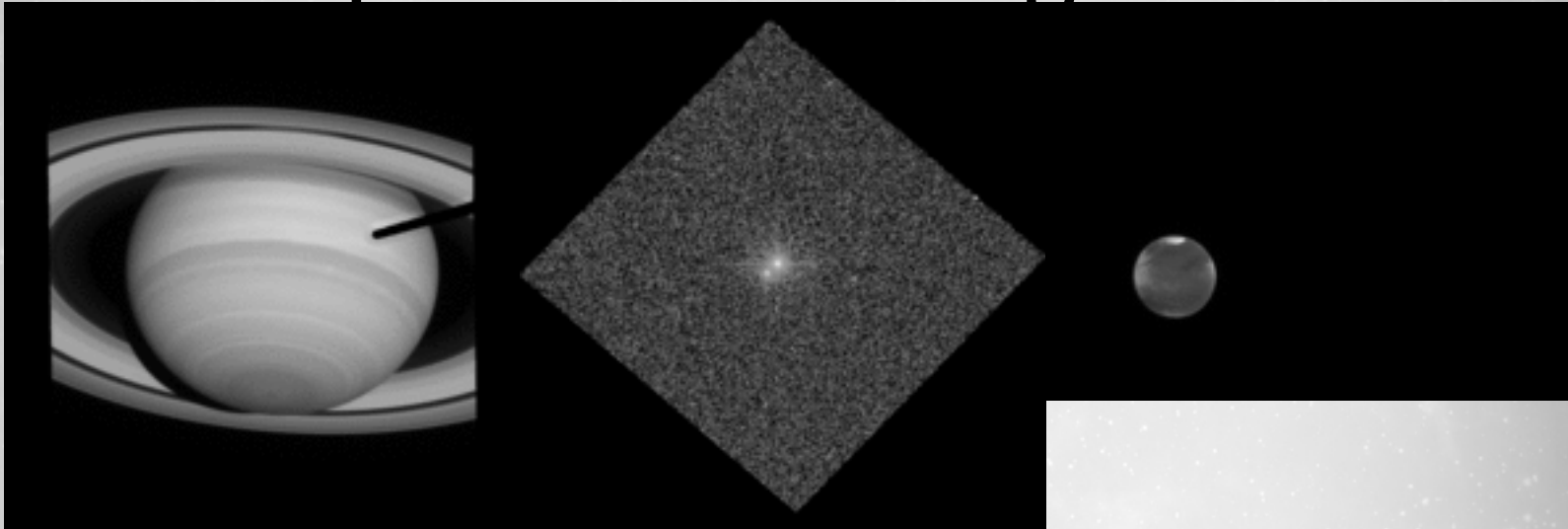
- Most complete linelist of a white dwarf to-date (Preval et al.)
- Over 150 spectra from STIS and FUSE
- Nearly 950 lines identified using latest spectral libraries
- Individual spectra, coadded spectra, linelists



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In Progress: HST Moving Target Re-processed Images



- WFPC-2, WFC-3, and ACS re-processed with different CR rejection and drizzling, optimized for moving targets
- Includes predicted ephemerides of known moving targets within an image
- Includes a “MAST Classic” search interface