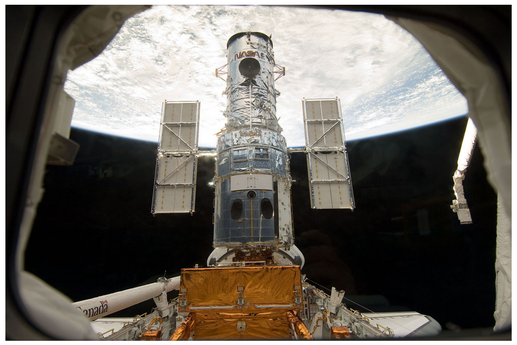
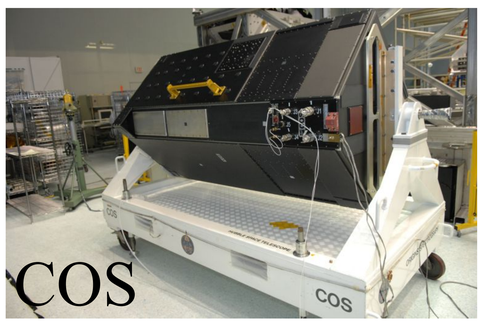
Historical Celebration – 2008 – 2017 – 60 yrs UV Astronomy

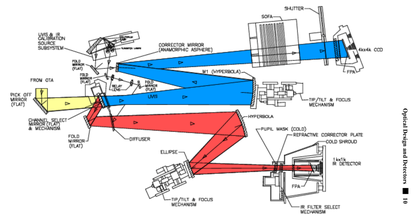
2008 2009 2010 2011 2012 2013 2014 2015 2016 2017

HST SM4 (2009)

COS/CU, Green-PI
WFC3/GSFC, Kimble/McKenty-coPIs
STIS, ACS repaired







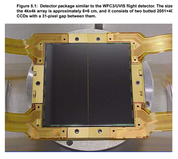
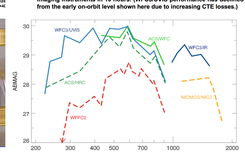


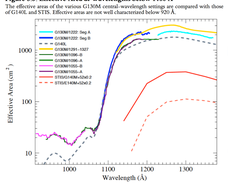
Figure 5.1: Detector package similar to the WFC3/UVIS flight detector. The size the 4kx4k array is approximately 4×4 cm, and it consists of two butted 2051×4K CCDs with a 31-pixel gap between them.

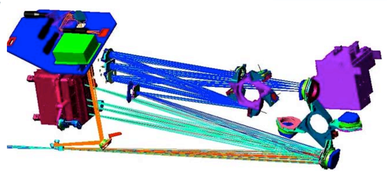
Figure 3.4: Limiting point-source magnitudes reached by optical/infrared *HST* imaging instruments in 10 hours. (WFC3/UVIS performance has declined slightly from the early on-orbit level shown here due to increasing CTE losses.)

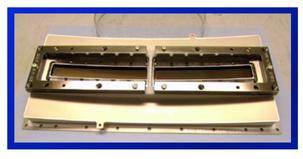


The Capabilities of COS 48

Figure 5.3: Effective Area at Wavelengths below 1400 Å
The effective areas of the various G130M central-wavelength settings are compared with those of G140L and STIS. Effective areas are not well characterized below 920 Å.







HST UV Initiative:

making the most of existing assets

Cycle	Proposal	Title	PI	Orb Ext	Orb Para
24	14767	The Panchromatic Comparative Exoplanetary Treasury Program	Sing	498	0
21	13346	Advanced Spectral Library II: Hot Stars	Ayres.	230	0
21	1330	Mapping the AGN Broad Line Region by Reverberation	Peterson	179	0
21	13364	LEGUS: Legacy ExtraGalactic UV Survey	Calzetti	154	154
24	14634	HST-Juno synergistic approach of Jupiter's magnetosphere and ultraviolet auroras	Grodent	151	
22	13872	The GOODS UV Legacy Fields: A Full Census of Faint Star-Forming Galaxies at z~0.5-2	Oesch	132	132
21	13297	The HST Legacy Survey of Galactic Globular Clusters: Shedding UV Light on Their Populations and Formation	Piotto	131	131
22	13650	The MUSCLES Treasury Survey: Measurements of the Ultraviolet Spectral Characteristics of Low-mass Exoplanetary Systems	France	125	0
24	14784	HAZMAT: Habitable Zones and M dwarf Activity across Time	Shkolnik	118	0
21	13398	A Breakaway from Incremental Science: Full Characterization of the z<1 CGM and Testing Galaxy Evolution Theory	Churchill	110	0
24	14610	A Legacy Imaging Survey of M33.	Dalcanton	108	0
24	14675	Metal Evolution and TrAnsport in the Large Magellanic Cloud (METAL): Probing Dust Evolution in Star Forming Galaxies	Roman-Duva	101	0
23	14071	How are HI Disks Fed? Probing Condensation at the Disk-Halo Interface	Borthakur	100	0
22	13846	The COS Absorption Survey of Baryon Harbors (CASBaH): Probing the Circumgalactic Media of Galaxies from z = 0 to z = 1.5	Tripp	99	0
23	14268	Project AMIGA: Mapping the Circumgalactic Medium of Andromeda	Lehne	93	0

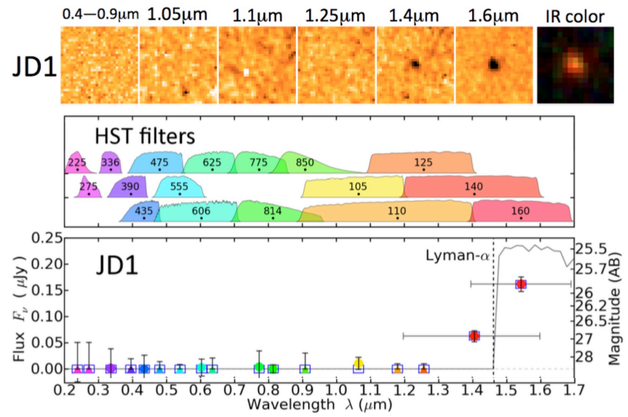
Astrophysics "Suborbital Portfolio":

Building the Future Now

New Science, New Technology, New Workforce

PI	Program SR = Sounding Rock BA = Balloon	Band	Science	Technologies	Future Mission Relevance	GS/PostDocs
Bock	SR:CIBER-2	IR	Cosmic IR Background	Wide Field Ramp Filter spectrograph	Explorer/ Probe	Lanz, Zemcov, Sullivan
Chakrabarti/ Cook	BA:PictureC	Vis	Planetary Environment of Epsilon Eridani	Vector Vortex Coronagraph: Deform mirrors; high precis pointing system; light weight SiC mirrors; MKID	WFIRST/ HabEx/ LUVOIR	Douglas, Mendillo
Figueroa	SR:Micro-X	Xray	Puppis SNR resolved Xray velocity structure	X-ray Micro-calorimeter: Adiabatic Demagnetization Refrigerator	Hitomi	Goldfinger
France	SR:CHESS	Far-UV	High Resolution Spectroscopy of ISM surrounding the Brightest Stars	High Resolution Echelle Spectrograph: high efficiency blazed gratings with low intrinsic scatter	HabEx/ LUVOIR	Hoadley, Fleming
Galeazzi	SR:DXL	Xray	Sources of Diffuse X-ray Background	Large area gas-proportional counters multiple soft x-ray bands	Explorer	Thomas, Liu
Green	SR:DEUCE	EUV	B-star Lyman Continuum Emission	Large Area Borosilicate MCP with X-strip anode	HabEx/ LUVOIR	Schindhelm, Nell, France
Kaiser	SR:ACCESS	Vis/IR	Precision Stellar Calibration (1%)	High Precession Calibration: High Uniformity MgF_2/Al mirrors; High stability LEDs	Euclid/ WFIRST/ HabEx/ LUVOIR	Morris
Martin	BA:Fireball-2	Near-UV	Lyman Alpha Cosmic Web	Near-UV Multiobject Spectrograph;UV fibers; delta-doped EMCCDs	Explorer/ ProbeHabEx/ LUVOIR	Jewell, Hamden, Morrissey
McCandliss	SR:NextGenFORTIS	Far-UV	Utility of Wide-field Far-UV MultiObject spectroscopy: Blue stragglers on GC; Low Met. SF in Mag Brid.; Shocks in SNR; Lyα escape	Far-UV Multiobject Spectrograph-NextGen Microshutter Array-Large Aspheric Gratings-Large Area MCP	Expl/Probe/ HabEx/ LUVOIR	Sahnow, Morrissey, McPhate, Burgh, France, Lupu, Fleming, Redwine
McEntaffer	SR:WRX-R/OGRE/	Xray	WRX-R:Vela SNR Soft Xray diagnostics of SNR/ISM interaction OGRE: Soft Xray obs of Capella	WRX-R: Water Recovery; Soft Xray Det OGRE: High efficiency Off-plane grating spectrometer	Athena	Miles, Tutt

Near Future: *JWST* UV in the IR – The high redshift universe revealed…



Far Future: LUVOIR/HabEx:

Same Science Different Price Points