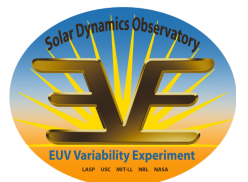
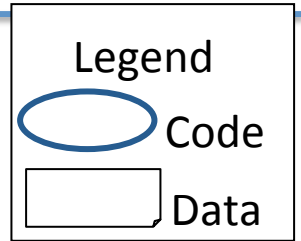

EVE Version 4 Data Product Plans

Tom Woods
Don Woodraska

29-Oct-2012



EVE Data Processing Flow - 2010

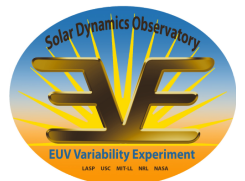
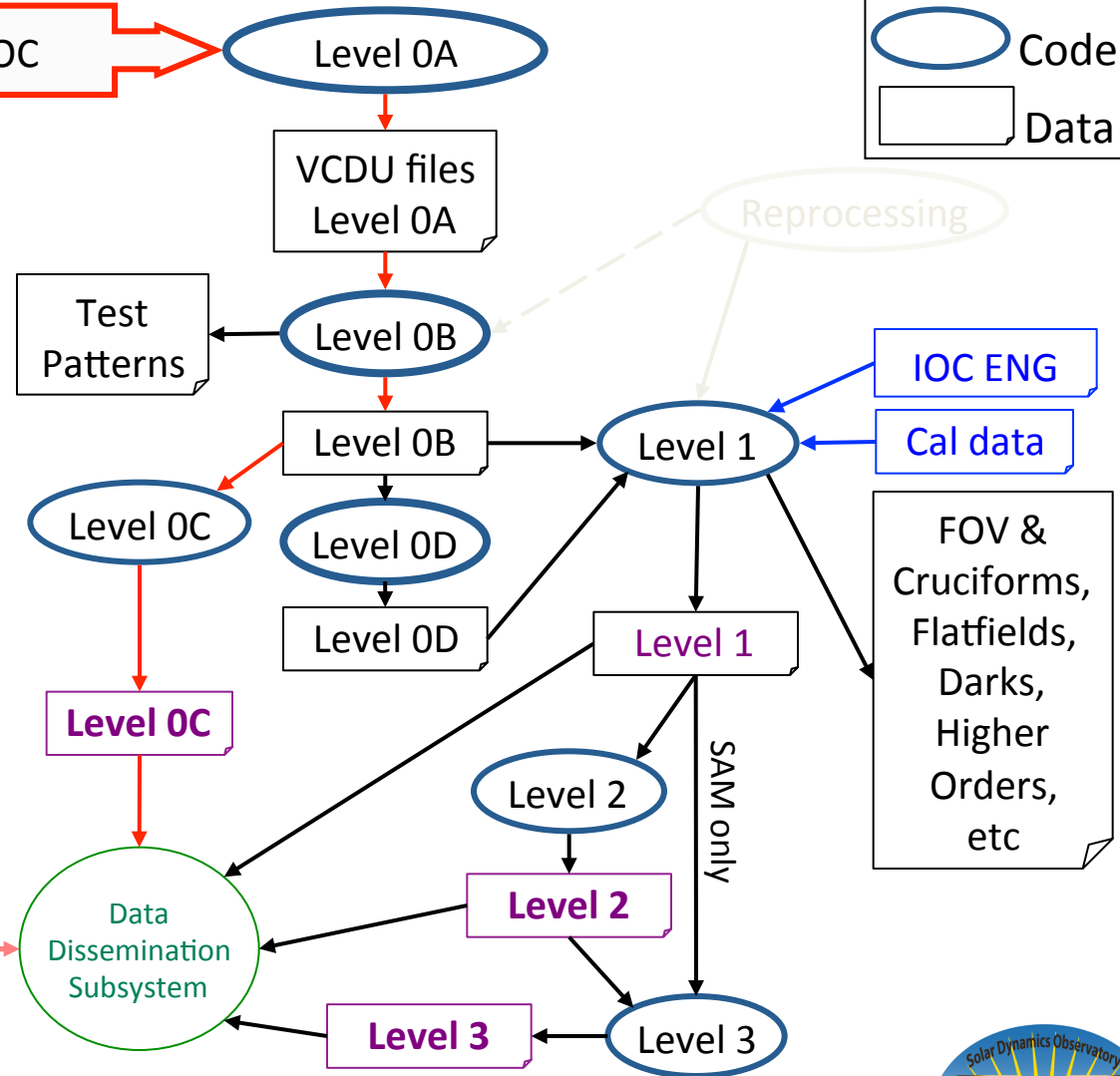


Level 0A to 0C are "time-critical" space weather data flow

Levels 1-3 are not near-RT

Public Products

Primary are 0C, OCS, 2, & 3



EVE Data Product Overview - 2010

Future Version

Ver 3

Ver 1

Ver 1

Ver 1

Ver 1

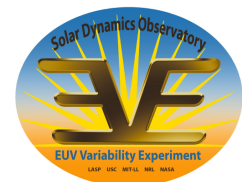
Ver 2

Level	Description	Components	Wavelength Coverage	Wavelength Sampling	Temporal Sampling	Time Span of Data File	Daily size (GB)	Latency of Availability
L0C	Space Weather Product: Crudely calibrated irradiances* (from Ka-Band data)	ESP bands + quads (flare)	0.1-7, 18.2, 25.6, 30.4, 36.6 nm	broadband ~4-nm	1-min	Latest 15-min and current 1-day (growing file)	0.004	<15 min
		MEGS-P	121-122 nm	1-nm	1-min		0.005	
		MEGS-A, B	5-105 nm	1-nm	1-min		0.01	
		MEGS-A, B, proxies	Select lines and bands**	Varies by band	1-min		0.01	
L0CS	Fastest Space Weather Product: Crudely calibrated irradiances* with least latency (from S-Band)	ESP bands + quads (flares)	0.1-7, 18.2, 25.6, 30.4, 36.6 nm	broadband ~4-nm	1-min	Latest 15-min and current 1-day (growing file)	0.005	< 1 min
		MEGS-P	121-122 nm	1-nm				
		XRS & SEM model	Proxies	Varies by band				
L1	Photometer Data: fully calibrated and corrected photometer irradiances	ESP	0.1-7, 18.2, 25.6, 30.4, 36.6 nm	~4-nm	1/4-sec	1-hour	0.03	1 Day
		SAM	0.1-7 nm***	0.1-1-nm	1- & 5-min		varies	
		MEGS-P	121-122 nm	~1-nm	1/4-sec		0.006	
L2	Spectra: fully calibrated and corrected spectral irradiances at instrument resolution	MEGS-A, B	5-105 nm	0.02 nm	10-sec	1-hour	1.2	1-2 Day
L2	Lines & Broadband irradiances: fully calibrated and corrected photometer irradiances and extracted spectral lines and bands	MEGS-A, B, P, ESP	select lines & bands	Varies by band	10-sec	1-hour	0.01	1-2 Day
L3	Merged Spectra: fully calibrated, corrected, and merged spectral irradiances	ESP, SAM, MEGS-A, MEGS-B, MEGS-P	0.1-65 nm (0.1-105 nm)	0.02, 0.1 & 1 nm	1-day	1-day	<0.001	1-2 Day

*All products are corrected to 1-AU except L0C and L0CS.

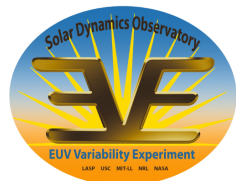
** Lines spanning Log T = 3.8-7.1, plus AIA and ESP bands.

*** SAM is a research project, L1A will have 4 element event list: time, location (x,y), and energy.



Known Issues in Version 3

- MEGS-B initial (first light) degradation and bright line degradation trend (both on CCD)
 - Worse for $\lambda > 70$ nm
 - See degradation dip after each MEGS-B flare campaign
 - Degradation trending with FF lamp is challenging
 - Could use proxy trending using MEGS-P (Ly- α)
- Recovery after CCD bake-out is over several days
 - Affects only MEGS-A and MEGS-B spectra
 - Will likely only bake-out once per year (or less)



Version 4 Product Plans

- Level 0C with full spectrum (up to 105 nm)
- Level 1 SAM spectra may never be produced, but could consider Level 1 SAM X-ray images
- Additional graphics / movies for real-time web pages (combining AIA images and EVE spectra)
- *Other ideas / desires ?*
 - e.g. Doppler shifts during flares, coronal dimming predictions for CME parameters (velocity, mass), ...

