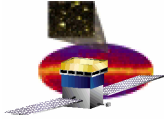


## DC2 summary

09:30	Jean Ballet	Catalog pipeline ( <a href="#">ppt,pdf</a> )
10:00	Vincent Loujon	DC2 source identification with gtsrcid ( <a href="#">ppt,pdf</a> )
10:15	Carlotta Pittori	ASDC catalog results ( <a href="#">ppt,pdf</a> )
10:30	Break	
<b>Session II Chair: Seth Digel</b>		
10:50	Tom Stephens	<a href="#">source detection</a> ( <a href="#">ppt,pdf</a> )
11:05	Gino Tosti	Source detection with Perugia wavelet code ( <a href="#">ppt,pdf</a> )
11:20	Jean-Marc Casandjian	2D likelihood for source detection ( <a href="#">ppt,pdf</a> )
11:35	Jean Ballet	Optimam filter method for source detection ( <a href="#">ppt,pdf</a> )
11:50	Giuseppe Romeo	Source detection using Voronoi tessellation ( <a href="#">ppt,pdf</a> )
12:05	Toby Burnett	UW source finder and fast likelihood ( <a href="#">ppt,pdf</a> )
12:30	Lunch	
<b>Session III AGN Studies Chair: David Davis</b>		
14:00	Benoit Lott	AGN lightcurves ( <a href="#">ppt,pdf</a> )
14:15	Tosti/Ciprini	Aperture photometry and time series analysis of selected Blazars ( <a href="#">ppt,pdf</a> )
14:30	Rita Sambruna	Study of the region around 3C 279 ( <a href="#">ppt,pdf</a> )
14:45	Sara Cutini/Dario Gasparrini	ASDC blazar spectral analysis ( <a href="#">ppt,pdf</a> )
15:00	Luis Reyes	EBL attenuation of DC2 sources ( <a href="#">pdf</a> )
15:15	Jennifer Carson	EBL attenuation of DC2 sources ( <a href="#">ppt,pdf</a> )
15:30	Break	<a href="#">Afternoon Coffee</a>
<b>Session IV GRB Analysis Results Chair: Valerie Connaughton</b>		
16:00	Nukri Komin	<a href="#">Combined spectral analysis of GRB /blind search</a> ( <a href="#">pdf</a> )
16:15	David Band	Burst localization, likelihood fits, binned blind search for bursts ( <a href="#">ppt,pdf</a> )
16:30	Michael Briggs	Estimating the Systematic Error of the GBM Locations ( <a href="#">pdf</a> )
16:45	Nicola Omodei	Study of the IRF, sensitivity, raw data analysis ( <a href="#">ppt,pdf</a> )
17:00	Jerry Bonnell	LAT GRB trigger: application to DC2 GRB ( <a href="#">ppt,pdf</a> )
17:15	Fred Knebn	Onboard detection of GRB ( <a href="#">pdf</a> )

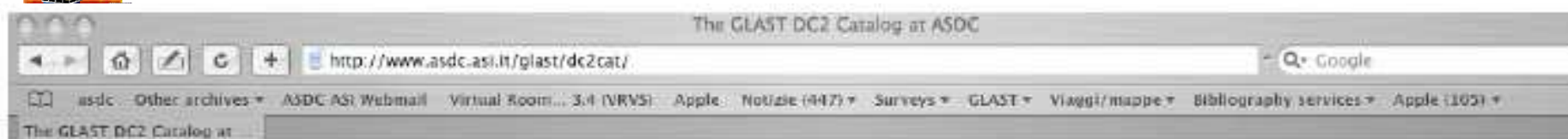


## Comparison with true sources (cont)

- Preliminary, and using the crude source correspondence definition  $R = 1^\circ$
- For most methods, more 'True' sources are found than were in the DC2Cat, and the range of number of true detections is remarkably small (406-443)
- The DC2Cat has the lowest number of spurious detections – an expected tradeoff with sensitivity

Method	# Sources	True	Spurious
MRF2	644	430	214
Optimal	560	443	117
UW	1651	422	1229
BIN	540	406	134
VR	2548	129	2419
SB	1463	435	1028
PGW	934	443	491
DC2Cat	380	335	45
DC2Sky	1720		

Best values in these columns are in red



## GLAST-LAT DC2 source catalog (V1) and data access at ASDC

Work in progress!  
this page is subject to frequent updates

[Gino Tosti's Wavelet DC2 catalog at ASDC](#)

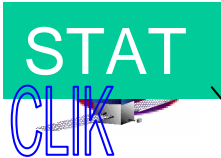
(latest  
addition)

Available parameters

- ☒ Name
- ☒ RA ☒ Dec
- ☐ Significance
- ☒ Flux(>100MeV)
- ☐ Radio\_f(1.4GHz)
- ☒ Class
- ☒ Other name
- ☐ sp\_index
- ☒ EGRET name
- ☐ DistCounterpart
- ☒ Redshift
- ☐ XFlux

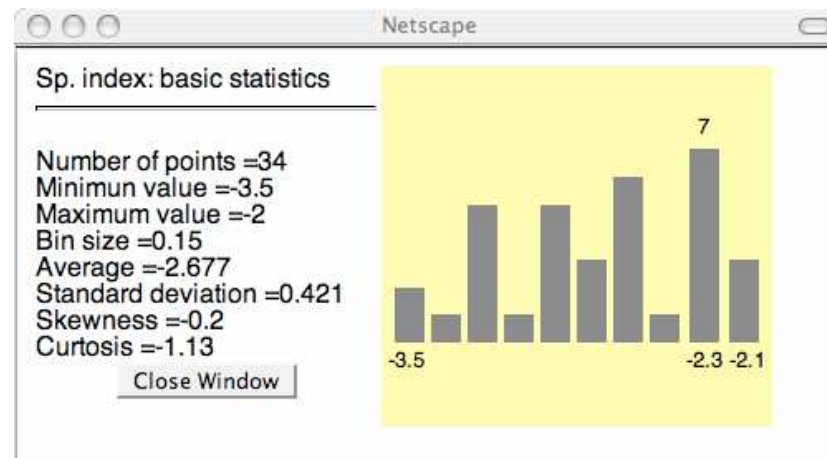
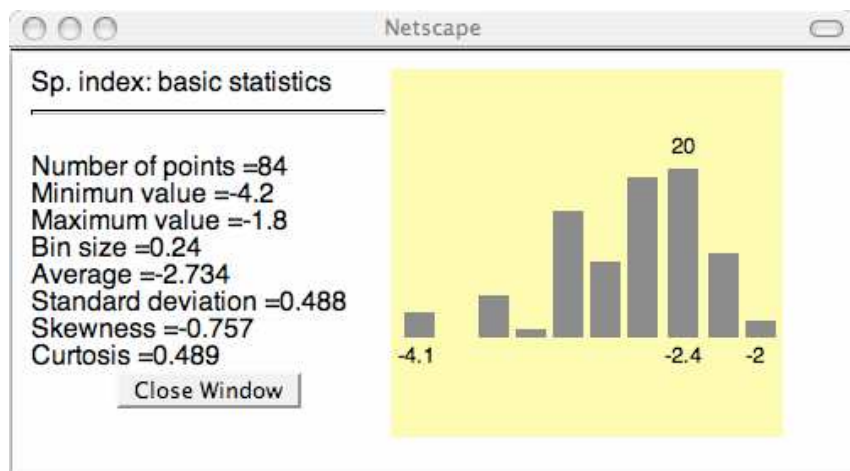
**GO**

Entry number			DC2 name	RA (J2000.0) hh mm ss.d	Dec (J2000.0) dd mm ss.d	Gamma flux (ph/cm <sup>2</sup> /s E>100 MeV) GLAST-DC2	Source classification Browse Classif	Other source names	Egret name	Reds
Subset selection mode: Inclusive			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1 <a href="#">Details</a>	Entry details	<a href="#">DC2 data access</a>	MRF0021	00 10 44.5	+73 10 26.4	2.51e-7	SNR	CTA1,SNR119	3EG J0010+73	0
2 <a href="#">Details</a>	Entry details	<a href="#">DC2 data access</a>	MRF0324	00 04 58.8	-52 27 00.0	1.29e-7	Unid. radio source	-----	-----	0
3 <a href="#">Details</a>	Entry details	<a href="#">DC2 data access</a>	MRF0301	00 10 39.8	+02 47 27.5	8.62e-8	Unid. radio source	-----	-----	0
4 <a href="#">Details</a>	Entry details	<a href="#">DC2 data access</a>	MRF0357	00 32 13.9	+38 35 20.3	9.39e-8	Unid. radio source	-----	-----	0
5 <a href="#">Details</a>	Entry details	<a href="#">DC2 data access</a>	MRF0300	00 38 06.8	-09 41 59.8	9.51e-7	QSO R/Loud flat radio sp.	J003806.20-	3EG J0038-09	2.10

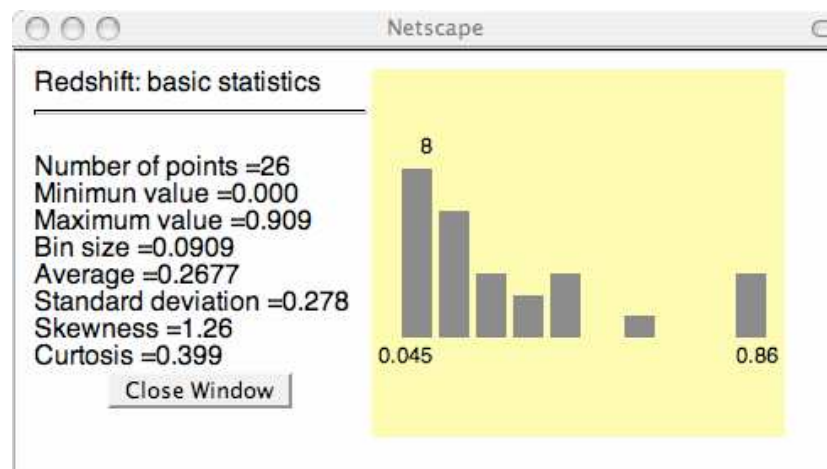
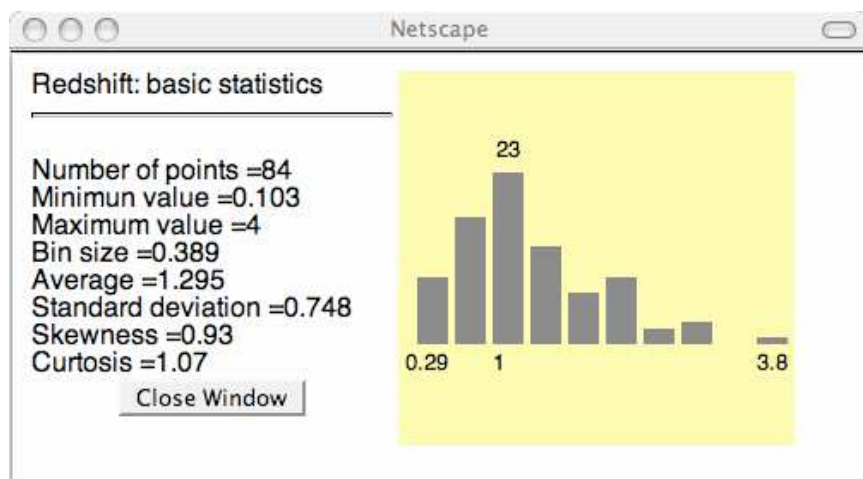


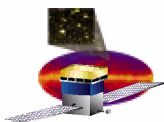
FSRQ (84 sources) Spectral  
index

BL Lacs (34 sources)



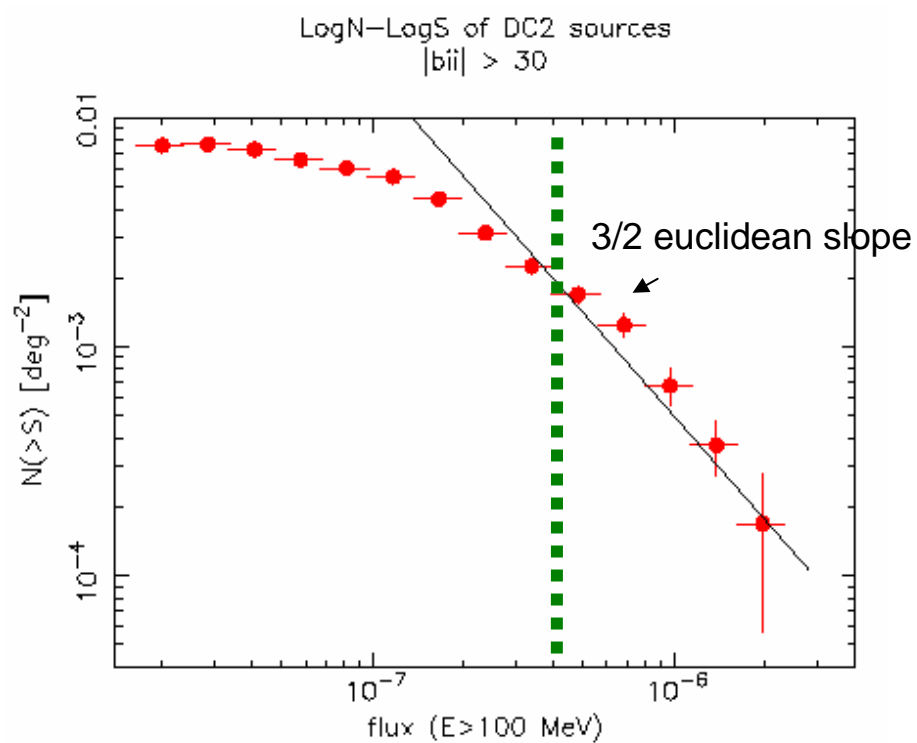
Redshift (8 BL Lacs with redshift unknown)





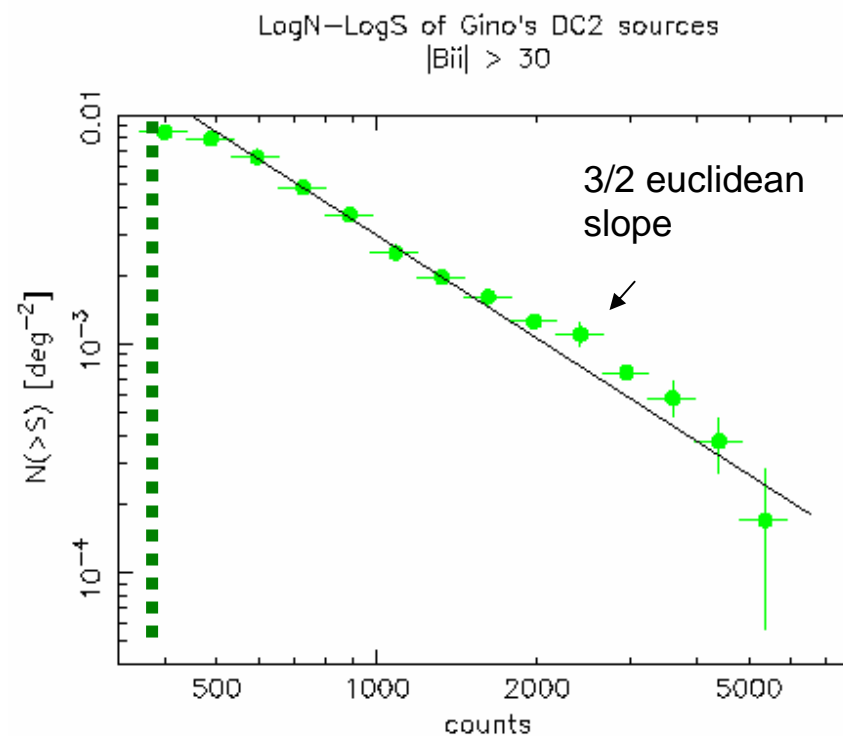
## VERY PRELIMINARY: LogN –LogS

### DC2 MRF Source Cat v1



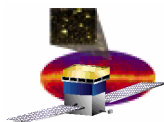
(135 MRF sources  $b_{ii}>30^\circ$ )

### Wavelet PG Cat



(154 PGW sources  $b_{ii}>30^\circ$ )





# Variable sources

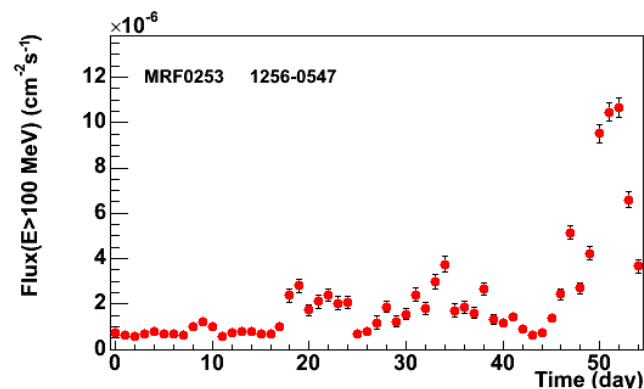
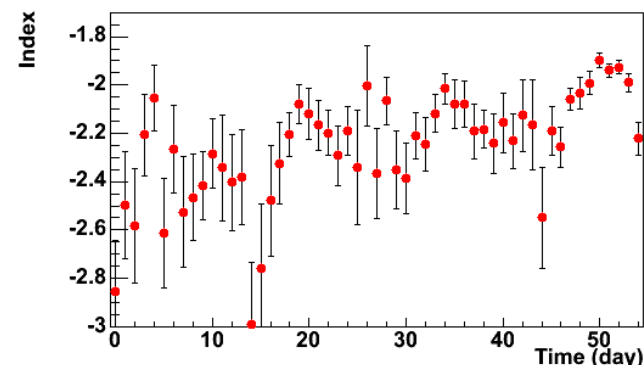
- Requirement: Produce lightcurves for at least 20 bright sources (from the data release plan, these are the sources we will release high level data from in year 1)
- Goal: look at lightcurves for many more sources

Light curves for sources from the 1st Year Data Release Plan - DC2 - SLAC Confluence - Microsoft Internet Explorer

Adresse: <https://confluence.slac.stanford.edu/display/DC2/Light+curves+for+sources+from+the+1st+Year+Data+Release+Plan>

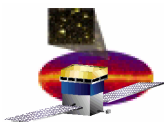
Source name	other name	v1 Catalog name	DRMNGB	MINUIT	simple estimate
0208-512	3EGJ0210-5055	MRF0294	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
PKS 0528+134	3EGJ0530+1323	MRF0194	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
0827+243	3EGJ0829+2413	MRF0264	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
Mrk421	3EGJ1104+3809	MRF0404	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
3C 273	3EGJ1229+0210	MRF0409	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
3C 279	3EGJ1255-0549	MRF0253	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
1406-076	3EGJ1409-0745	MRF0224	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
PKS1622-297	3EGJ1625-2955	MRF0362	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
1633+383	3EGJ1635+3813	MRF0258	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
1730-130	3EGJ1733-1313	MRF0020	<a href="#">light curve</a> , <a href="#">file</a>		<a href="#">light curve</a>
3C 454.3	3EGJ2254+1601	MRF0293	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
LSI +61 303	3EGJ0241+6103	MRF0044	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
Mrk501		MRF0257	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
W Com	3EG1222+2841	MRF0234	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
1ES 1959+650		MRF0012	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
1ES 2344+514		MRF0351	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
H 1426+428		MRF0240	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>
PKS2155-304		MRF0330	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a> , <a href="#">file</a>	<a href="#">light curve</a>

http://www.cenbg.in2p3.fr/tp/astropart/glast/DC2/light\_curves/sources/lc\_5\_0\_1256-05

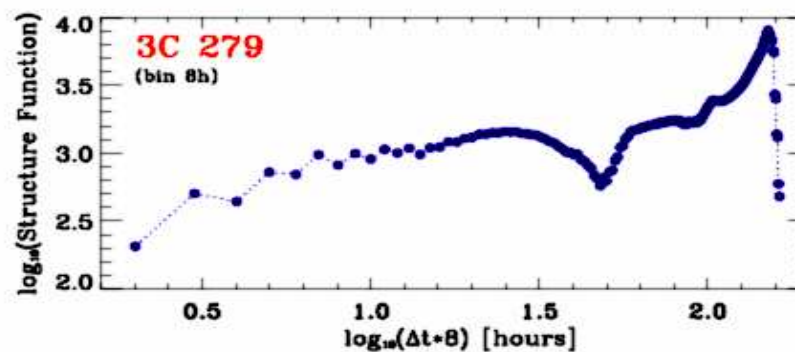
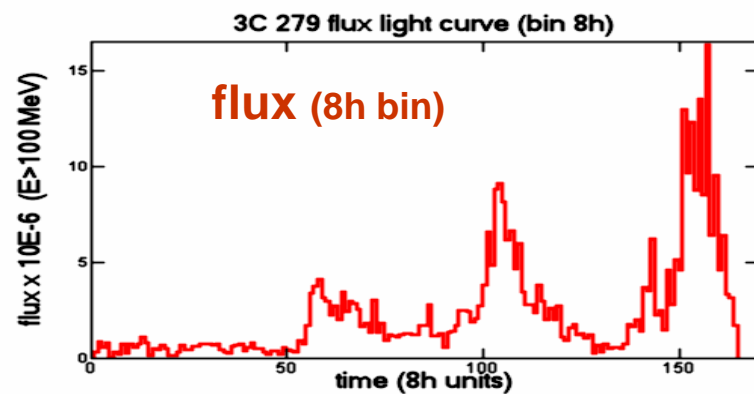
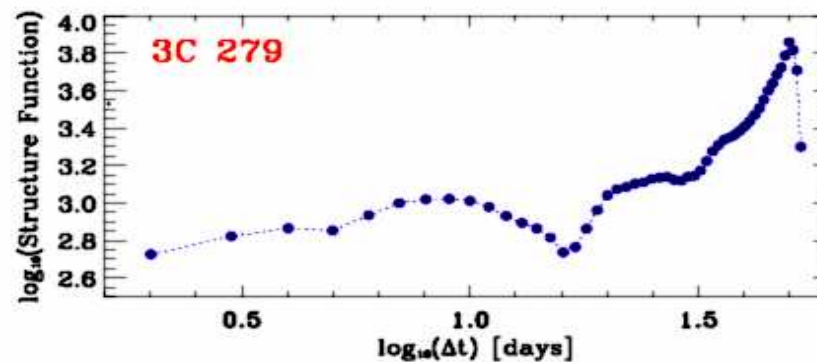
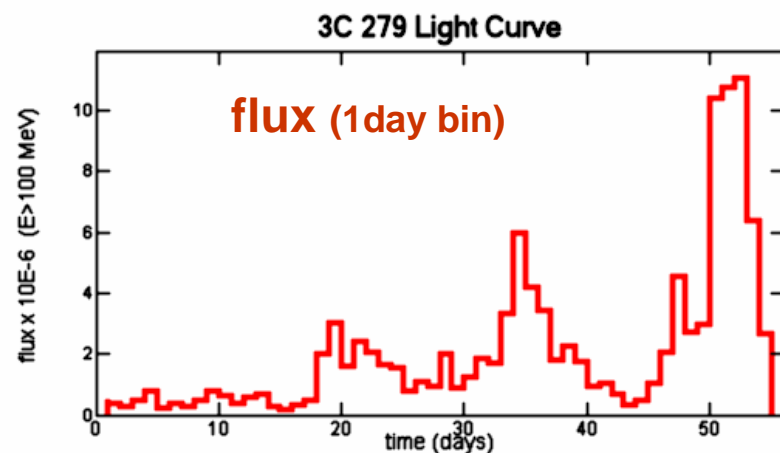


By Benoît Lott

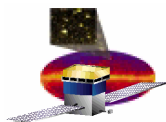
Blazar VRVS meeting, June 20, 2006



# Variable Sources

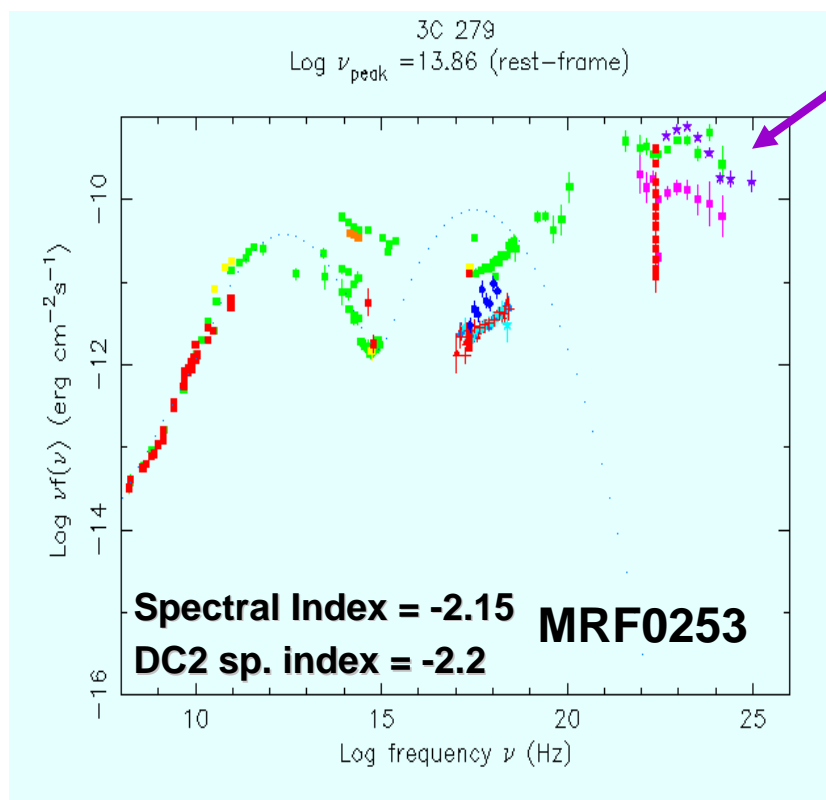


Gino Tosti – Taking lightcurves to the next level...

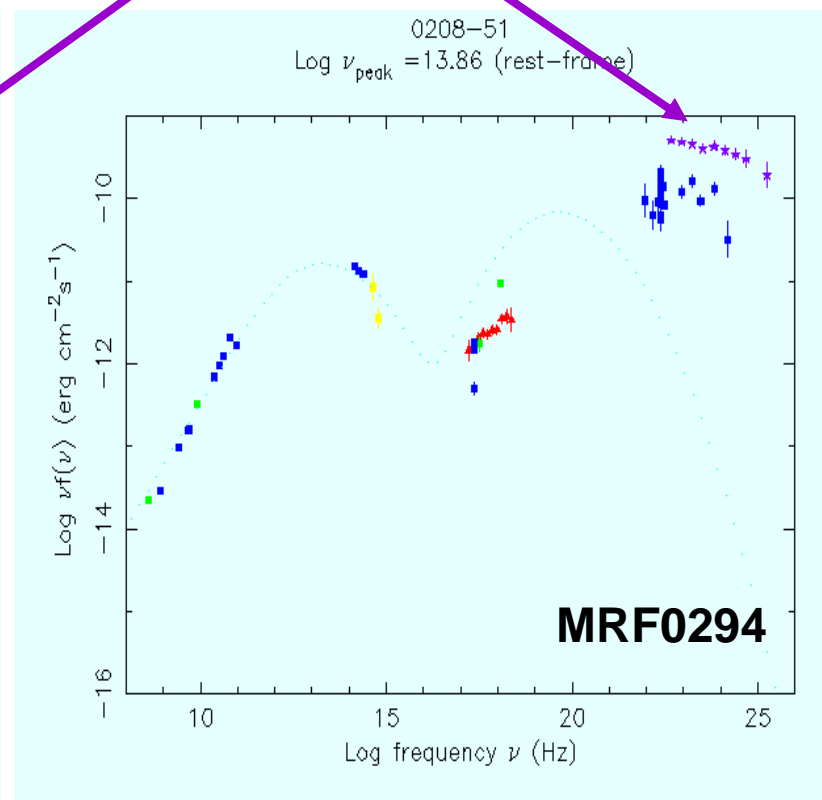


# Spectral Studies

Sara Cutini and Dario Gasparini presented spectral studies of a sample of blazars using xspec.



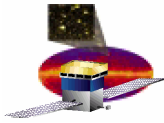
**GLAST/MaxEGRET = 0.9**



**GLAST/MaxEGRET = 1.9**

Blazar VRVS meeting, June 20, 2006

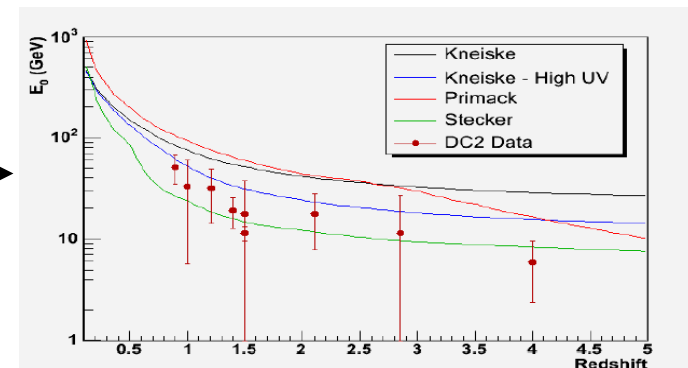
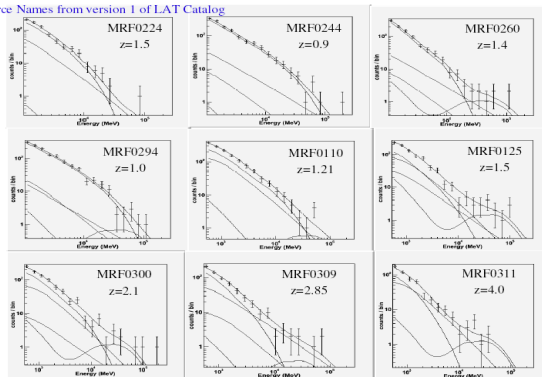




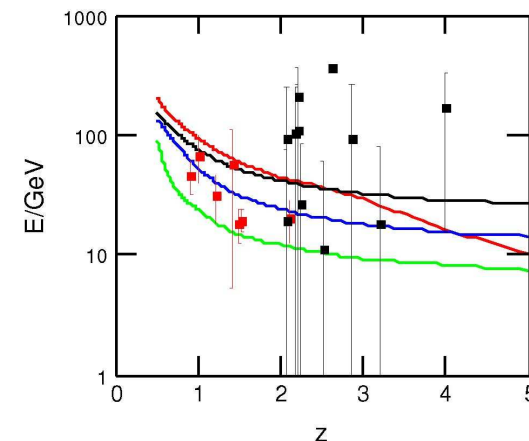
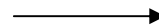
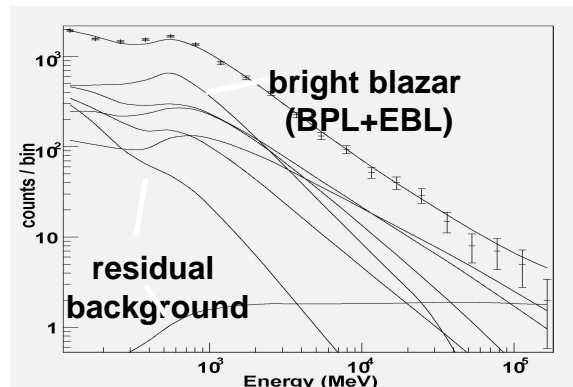
# Spectral Studies

- Goal: Study spectra of pulsars to determine the shape of spectral cutoffs
- Goal: EBL attenuation studies (redshift dependent cutoffs)
- Goal: Search for spectral signatures of dark matter

Source Names from version 1 of LAT Catalog

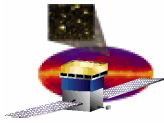


Luis  
Reyes



Jennifer  
Carson

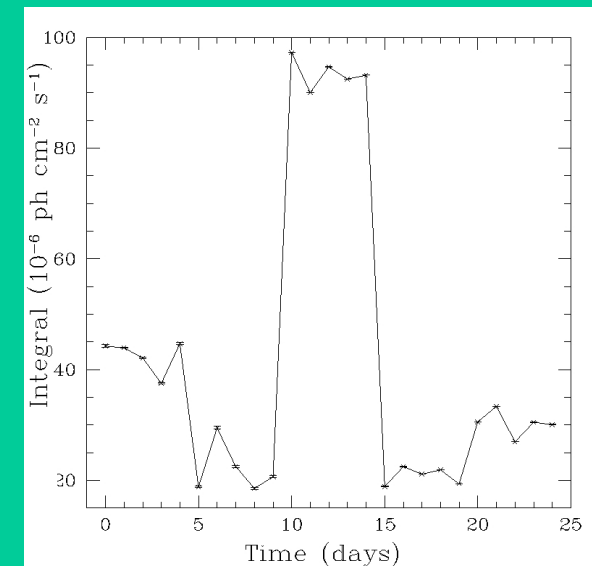
j, June 20, 2006



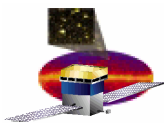
# Likelihood accuracy/stability

- Several people examined the effect of residual background (Reyes, Carson, Cutini/Gasparini)
- Rita Sambruna presented a systematic study of the behaviour of the likelihood analysis in the presence of neighbouring sources and then took a closer look at the 3C279 region.

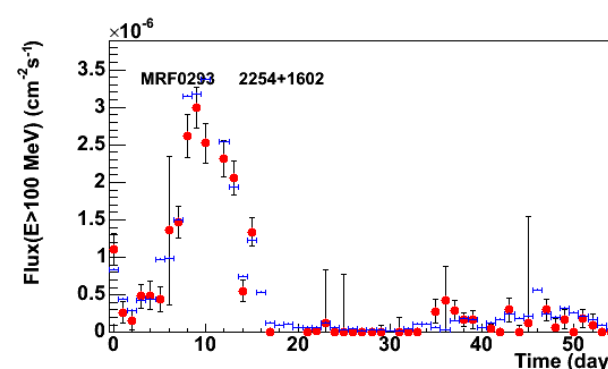
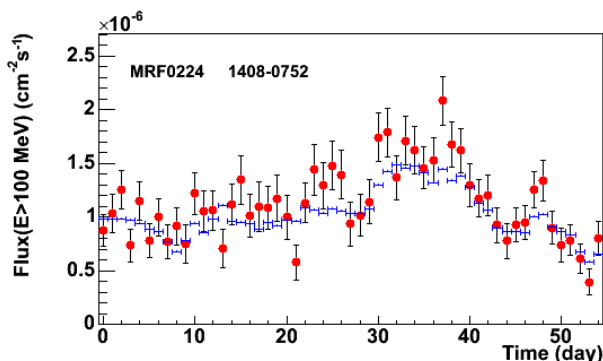
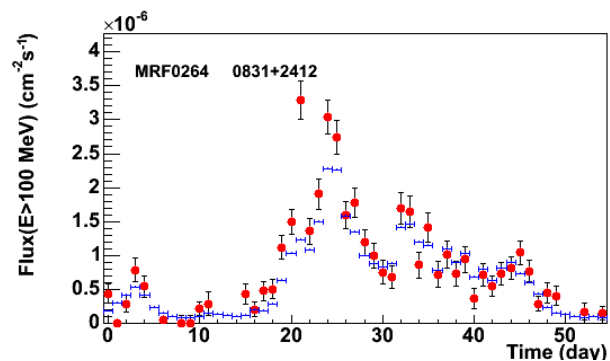
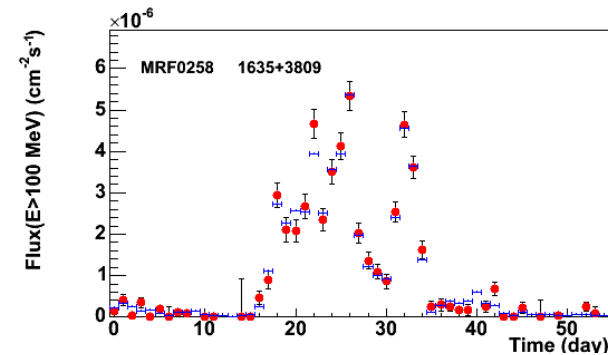
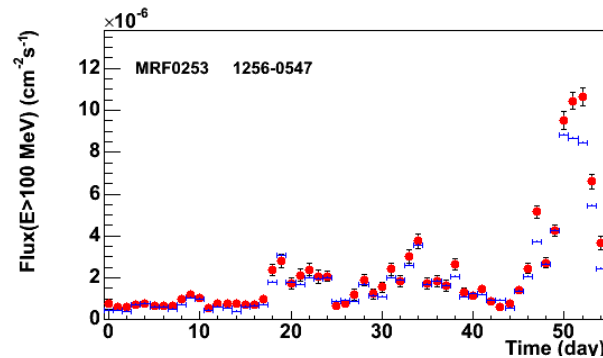
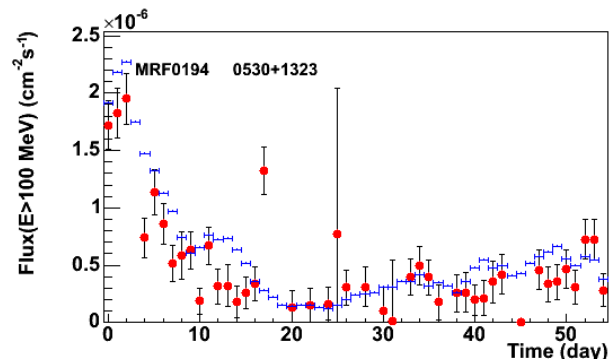
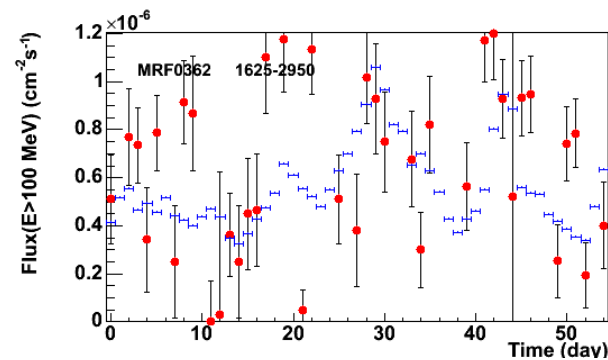
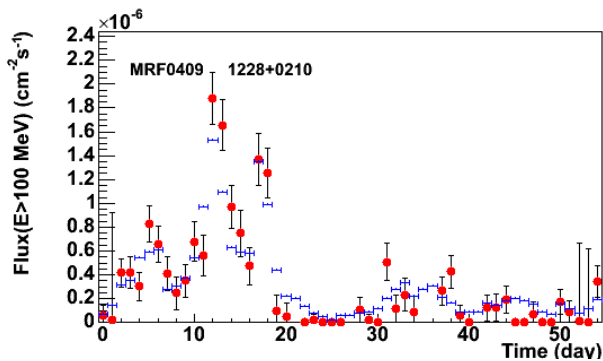
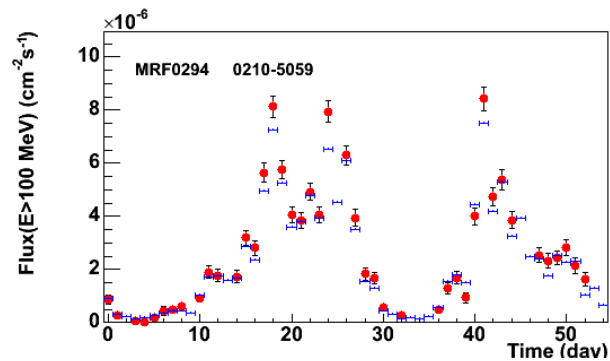
		DRMNGB	MINUIT
1	●	0-60%	5-60%
2	●	10-120%	
3	● ●	0-110%	
4	● ●	20-100%	30-500%
5	● ●	20-50%	
6	● ●	30-80%	

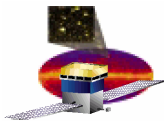


The wrong model overestimates the flux

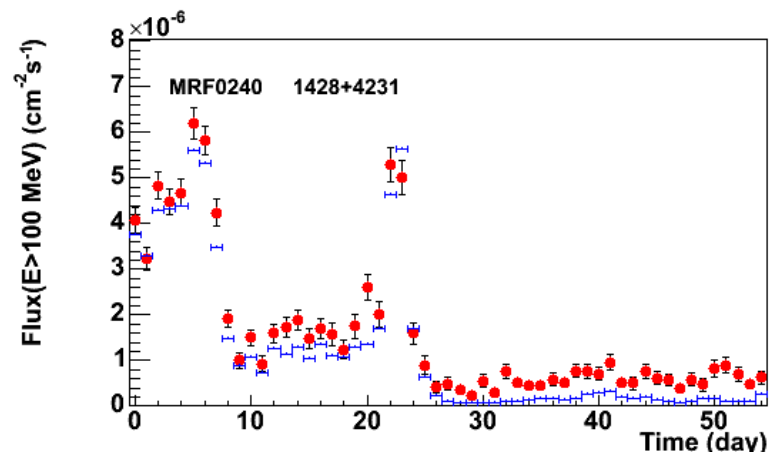
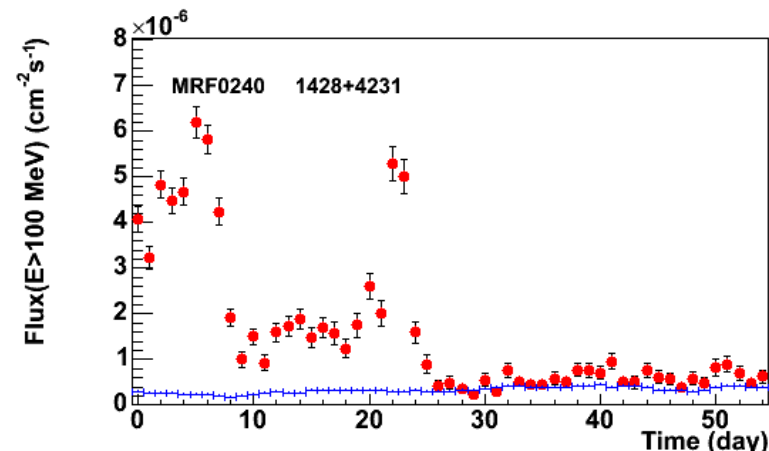
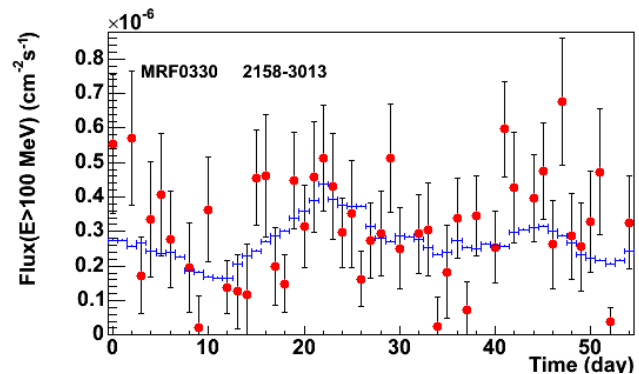
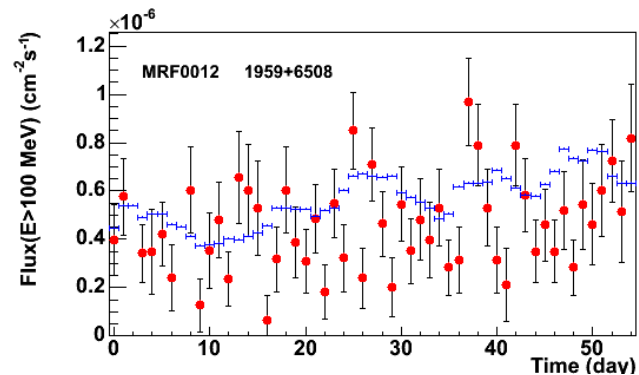
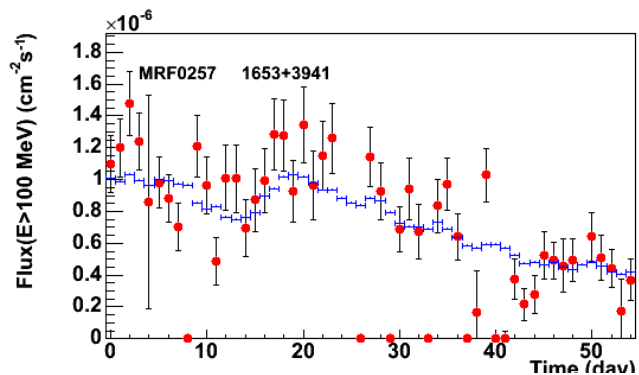


# Comparison with “truth” (1)

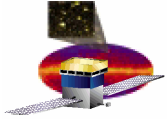




## Comparison with “truth” (2)



Flaring source: B31428+422  
instead of 1ES1426+428



## DC3 perspectives

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**DC1. Modest goals. Contains most essential features of a data challenge.**

**DC2. More ambitious science goals. Encourage further development, based on lessons from DC1.**

**DC3. Support for flight science production.**

“Service challenge”: systematic studies before launch

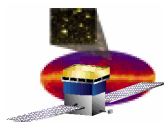
The “truth” will be known from the start.

Completed by GLAST Science Symposium in February(?)

One year worth of data,

Possibility of different realizations of the sky,

but common data set + milestone enables strong interaction  
between Science Groups



# Work to be Done: Responsibilities

## Systematic & Sensitivity Studies

- pt sources, extended sources, transients; upper limits
- diffuse analyses
- variability (incl. pulsars)
- neighboring sources
- flaring & diffuse effects
- focus on 1st papers analyses

Analysis  
Coordinator  
and Science  
groups

## Other Studies

- PSR (“handoff review”) performance
- analysis tuning (signal/bkgd, quality knobs by topic)
- update simulation (s/c model, tune from beam test and IA data...)
- first light observations (simulate point, then scan); early ops analyses
- effects of burst repoints
- sky survey strategy checks
- background fluxes evaluation early ops

C&A group and  
ISOC jointly

## Readiness

ISOC

- digital data problems
- instrument problems (bad channels, wrong rates, recognizing a few wrong constants, ...)
- ASP (aka quicklook running and burst handling)
- receiving data dumps, running the pipeline, benchmarking resources and times, reliability
- idiosyncrasies vs. problems
- day(s) in the life
- performance monitoring
- documentation

Collaboration participation  
needed for each of these!