## Monitoring Unassociated Fermi Sources with Swift

Mark Wells
May 30, 2015
Fermi Summer School

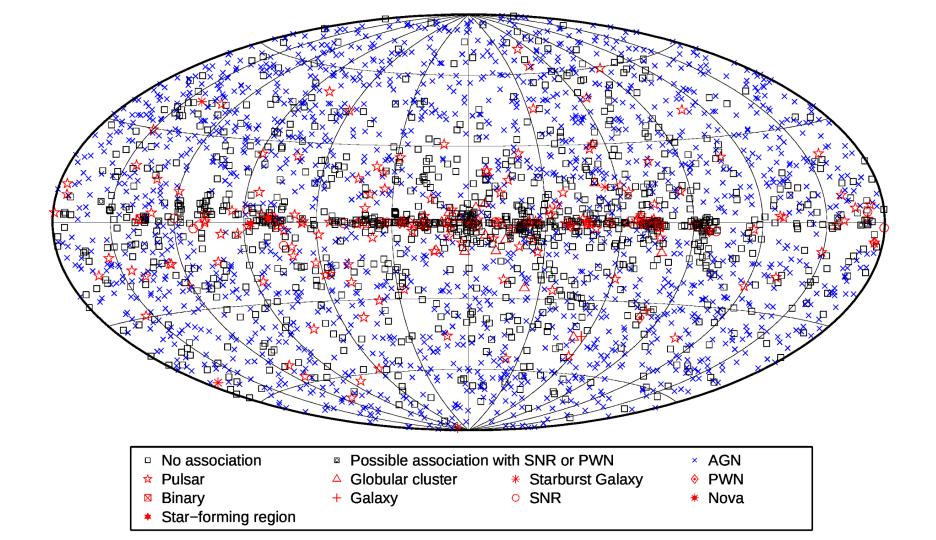


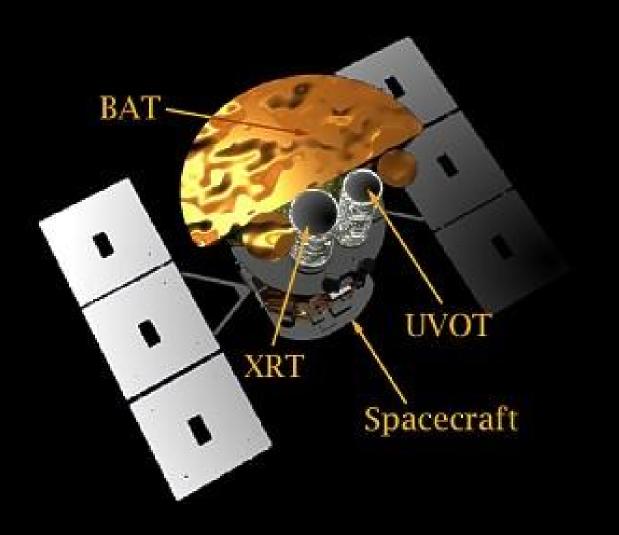
Table 6. LAT 3FGL Source Classes

Description	Identified		Associated	
-	Designator	Number		
Pulsar, identified by pulsations	PSR	143	•••	•••
Pulsar, no pulsations seen in LAT yet	•••	• • •	psr	2
Pulsar wind nebula	PWN	9	pwn	2
Supernova remnant	SNR	12	snr	11
Supernova remnant / Pulsar wind nebula	•••	• • •	$\operatorname{spp}$	49
Globular cluster	$\mathbf{GLC}$	0	glc	15
High-mass binary	$\mathbf{H}\mathbf{M}\mathbf{B}$	3	hmb	0
Binary	BIN	1	bin	0
Nova	NOV	1	nov	0
Star-forming region	$\mathbf{SFR}$	1	$\mathbf{sfr}$	0
Compact Steep Spectrum Quasar	CSS	0	CSS	1
BL Lac type of blazar	${f BLL}$	18	Ыl	642
FSRQ type of blazar	$\mathbf{F}\mathbf{S}\mathbf{R}\mathbf{Q}$	38	fsrq	446
Non-blazar active galaxy	AGN	0	agn	3
Radio galaxy	RDG	3	rdg	12
Seyfert galaxy	SEY	0	sey	1
Blazar candidate of uncertain type	BCU	5	bcu	568
Normal galaxy (or part)	$\mathbf{GAL}$	2	gal	1
Starburst galaxy	SBG	0	sbg	4
Narrow line Seyfert 1	NLSY1	2	nlsy1	3
Soft spectrum radio quasar	SSRQ	0	ssrq	3
Total	•••	238	•••	1786
Unassociated	•••	•••	•••	1010

Total	• • •	238	• • •	1786
Unassociated	•••	• • •	• • •	1010

Total	•••	<b>2</b> 38	• • •	1786
Unassociated	• • •	• • •	• • •	1010

# The unassociated sources comprise approximately 36% of the 3FGL Catalog.



### Swift-XRT Survey of Fermi Unassociated Sources

These results are part of the *Swift* program to follow-up *Fermi* unassociated sources in an attempt to find X-ray counterparts to the unidentified gamma-ray sources. As new observations are performed, these pages will be updated in nearly real time. Please use these results as a guide and proceed with caution when using them in a publication since they are the result of an automated analysis.

When using these data and results in publications, please reference M.C. Stroh & A.D. Falcone 2013, ApJS, 207, 28; arXiv: 1305.4949 for a description of many of the analysis techniques used to reduce these data (note: a more detailed paper describing the complete data set and analysis is forthcoming). Please contact Abe Falcone and Michael Stroh at unassociated@swift.psu.edu if you have any questions about the program or the analysis, or to simply to let us know that you've made use of these data.

#### **1FGL Fields**

View 2FGL fields View 3FGL fields

Target	RA (J2000)	Dec (J2000)	Exposure Time (ks)	# of Excesses in XRT FoV
1FGL J0000.8+6600c	0.2092	66.0019	3.6	0
1FGL J0001.9-4158	0.4825	-41.9816	6.0	2
1FGL J0003.1+6227	0.7983	62.4588	9.2	2
1FGL J0009.1+5031	2.2887	50.5201	3.8	2
1FGL J0030.7+0724	7.6775	7.4026	14.1	6

## Swift-XRT Survey of Fermi Unassociated Sources

These results are part of the *Swift* program to follow-up *Fermi* unassociated sources in an attempt to find X-ray counterparts to the unidentified gamma-ray sources. As new observations are performed, these pages will be updated in nearly real time. Please use these results as a guide and proceed with caution when using them in a publication since they are the result of an automated analysis.

When using these data and results in publications, please reference M.C. Stroh & A.D. Falcone 2013, ApJS, 207, 28; arXiv: 1305.4949 for a description of many of the analysis techniques used to reduce these data (note: a more detailed paper describing the complete data set and analysis is forthcoming). Please contact Abe Falcone and Michael Stroh at unassociated@swift.psu.edu if you have any questions about the program or the analysis, or to simply to let us know that you've made use of these data.

#### **1FGL Fields**

View 2FGL fields View 3FGL fields

Target	RA (J2000)	Dec (J2000)	Exposure (i letus)	# of Excesses in XRT FoV
1FGL J0000.8+6600c	0.2092	66.0019	3.6	0
1FGL J0001.9-4158	0.4 5	- 1.9516	6.0	2
1FGL J0003.1+6227	0.79.3	62.4588	9.2	2
1FGL J0009.1+5031	2.2887	50.5201	3.8	2
1FGL J0030.7+0724	7.6775	7.4026	14.1	6