



# Fermi

Gamma-ray Space Telescope

## Fermi

### Gamma-ray Space Telescope

**Users Group Meeting  
August, 2016**

**Mission Status Update**

**J. McEnery**

# Some goals for this meeting

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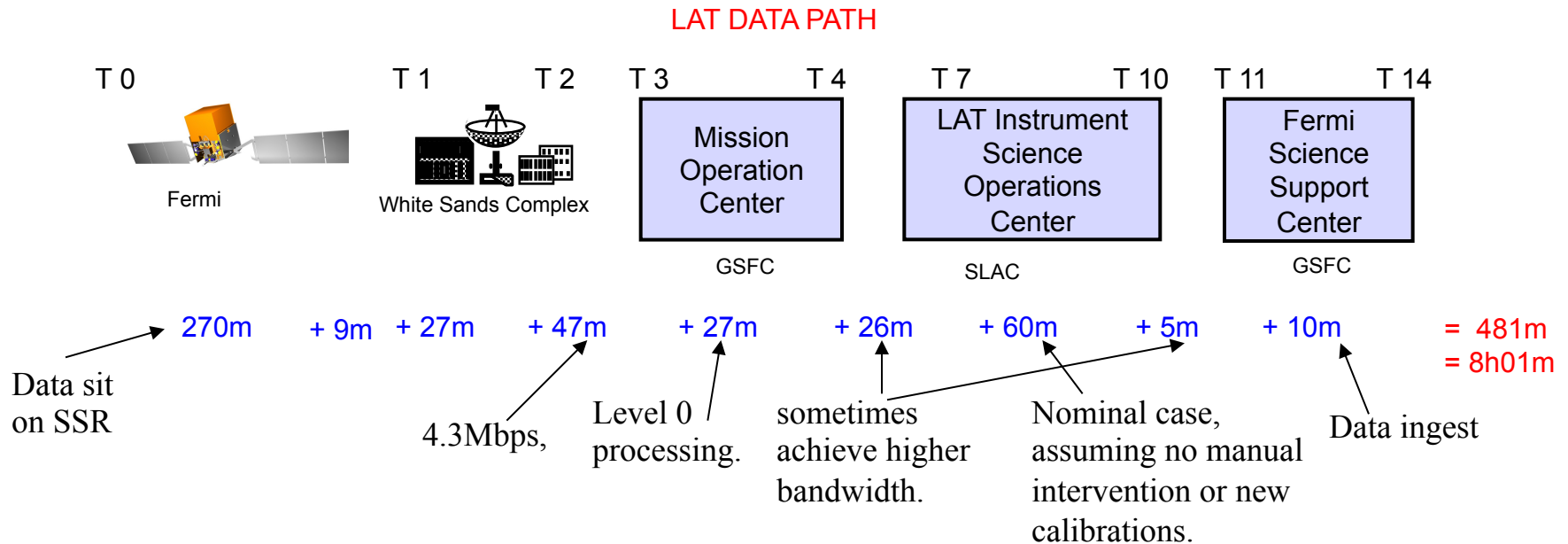
- **Comments and feedback from the users group on:**
  - **Targets of Opportunity – do we have the balance right?**
  - **Response to senior review report and reduced budget**
  - **How to defend/justify GI program**
- **Of course, comments on suggestions on any aspect of the mission are welcomed!**

# Observatory Status Highlights

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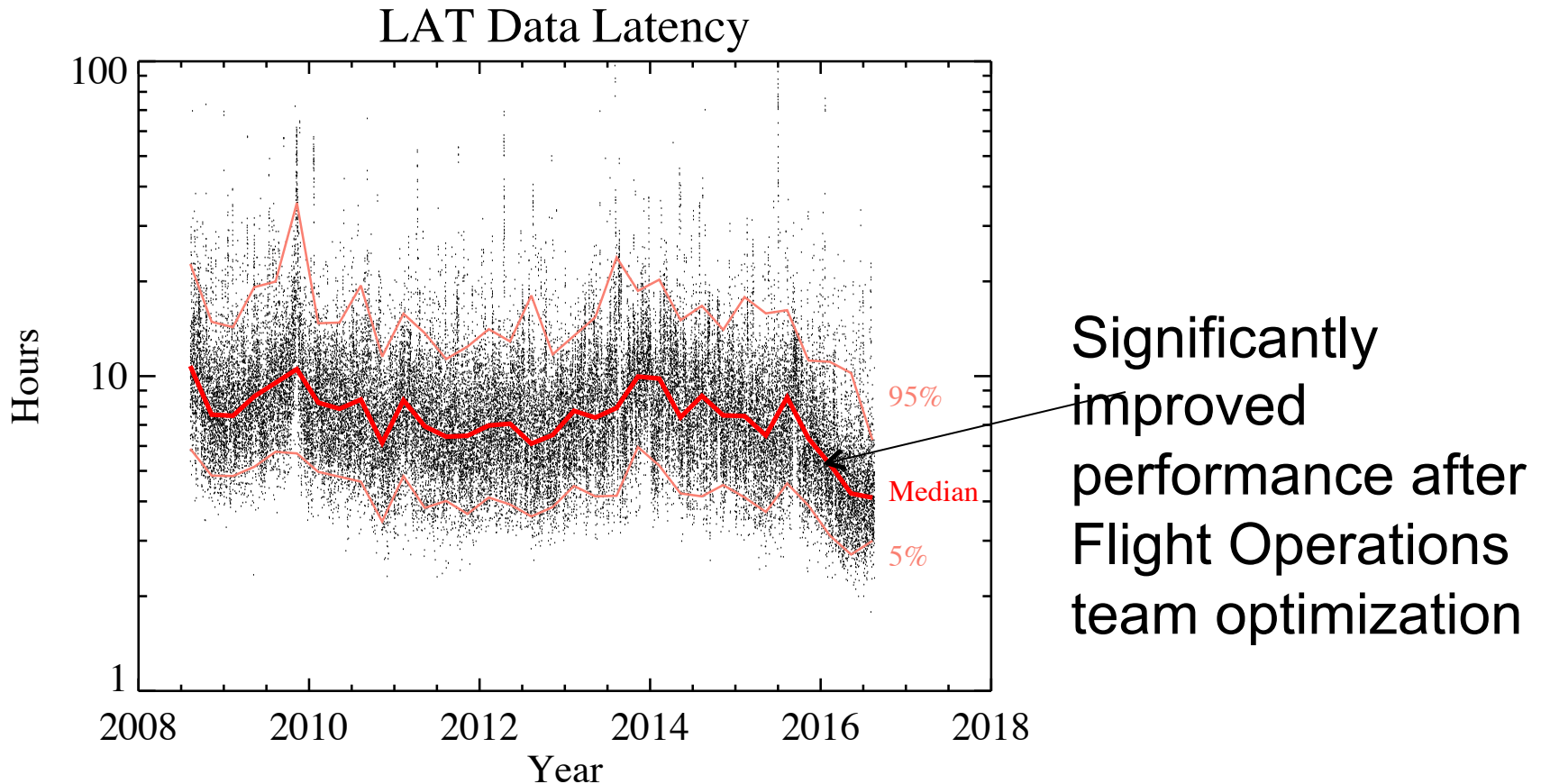
- **Observations:**
  - Regular +/-50 deg sky survey with occasional ARR
  - ToO: GRBs, several novae, PSR 1119-617
  - Two LAT onboard GRB detections (GRB160625B, GRB160509A)!
- **FOT/engineering activities**
  - Evaluating benefits of propulsion calibration tests
  - Switched MOC systems to use VMs – mostly seamless
  - Significant effort to reduce data latency (see next slide)

# Data Latency



- Changing downlink scheduling to reduce time that data sit on SSR
- Parallelizing data transfer from White Sands provides additional saving

# Data Latency Improvements



- The most immediate science return on this improvement has been for prompt LAT GRB localizations and flare detection

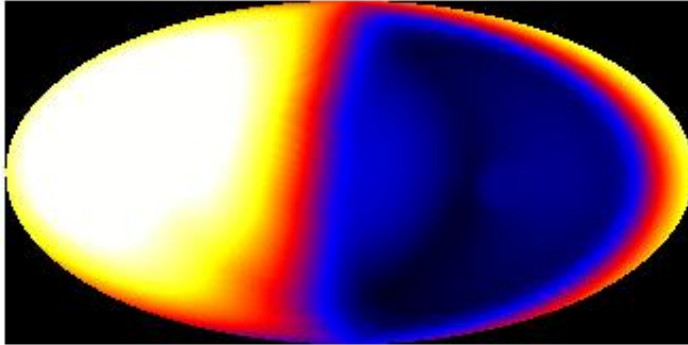
# Targets of Opportunity

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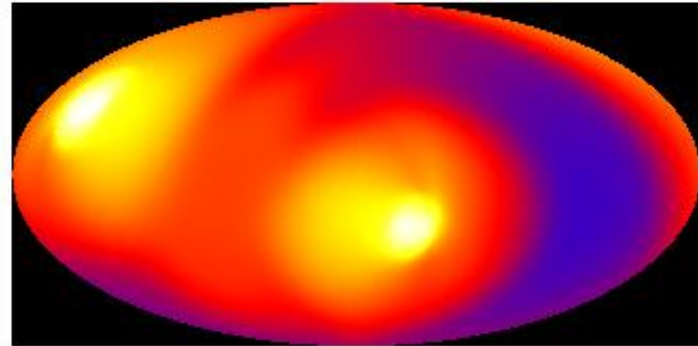
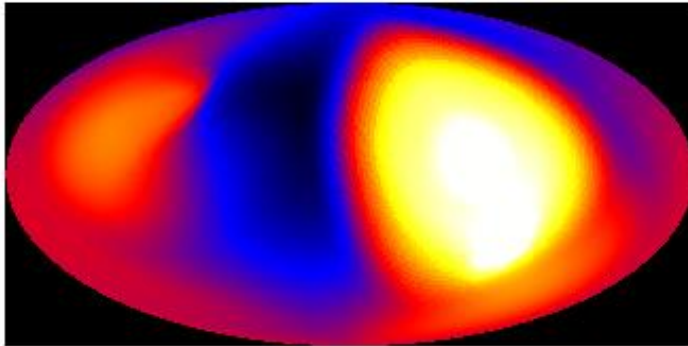
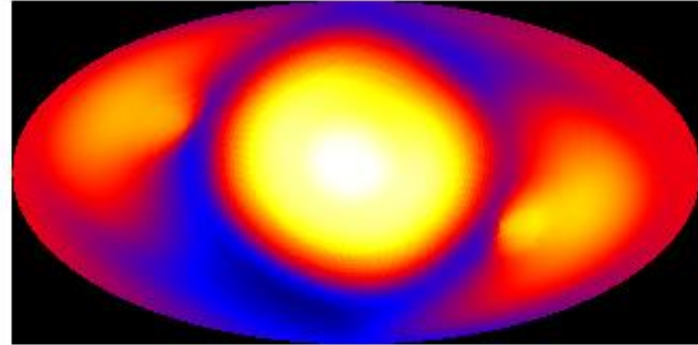
- **How do we balance competing needs of long uniform temporal baselines for variability studies with short term desire for increased exposure on interesting objects**

# TOO Discussion

M82 (northern rocking)



GC pointing/survey mix



PSR B1259-63 pointing/survey mix

50 deg survey



- Exposure at 10 GeV for selected observations in 2014



# New Fermi Services/Data

- The Fermi All-sky Variability Analysis ([FAVA](#))
  - Interactive webpage to browse variable source
  - Can generate lightcurve for any sky position



National Aeronautics and Space Administration  
Goddard Space Flight Center

FSSC • HEASARC



## Fermi All-sky Variability Analysis (FAVA)

### Light Curve Generator

RA:

Dec:

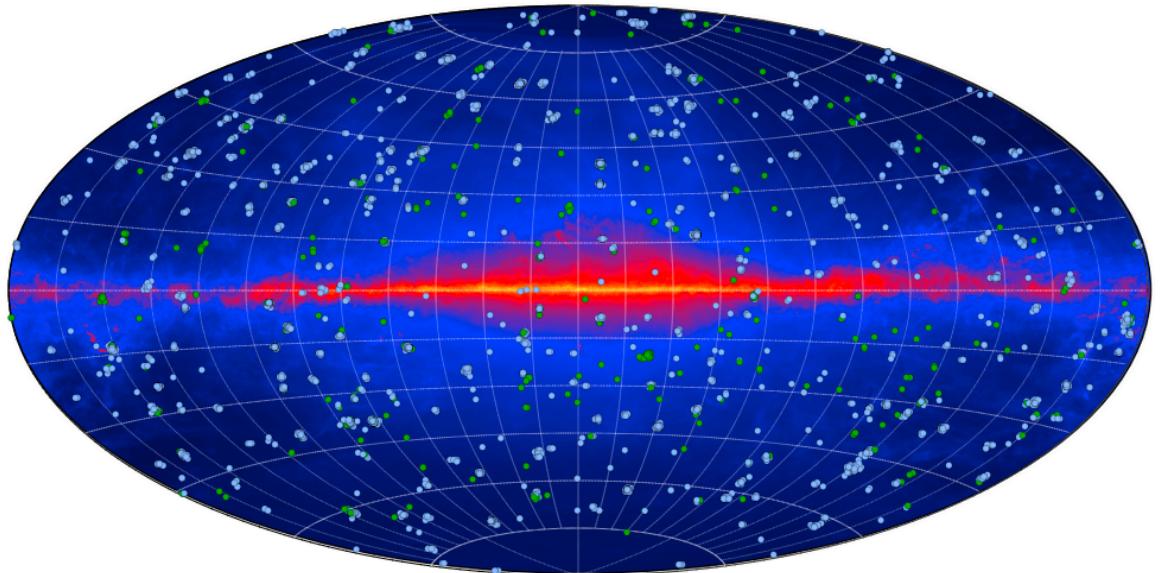
### FAVA Analysis Overview

Weeks Analyzed	410
FAVA Detections ( $>6\sigma$ )	3859
Associated Detections	3468
Unassociated Detections	391

### FAVA Resources

[FAVA Weekly Flare List](#)  
[FAVA Light Curve Generator](#)  
[1st FAVA Catalog](#)

### FAVA Flare Map



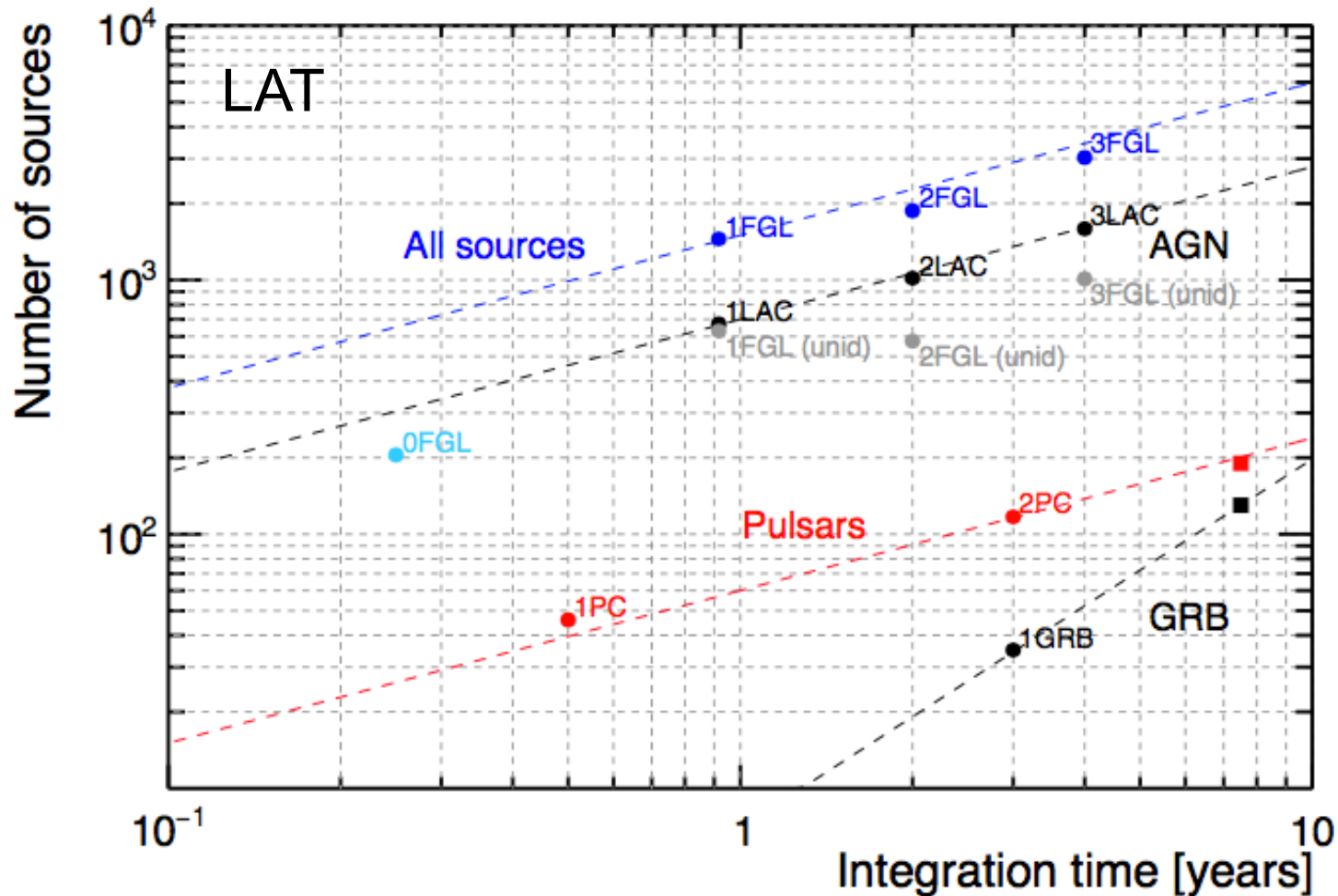


# New Fermi Services/Data

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- **Table of sub-threshold short GRB candidates in GBM data**
  - [http://gammaray.nsstc.nasa.gov/gbm/science/sgrb\\_search.html](http://gammaray.nsstc.nasa.gov/gbm/science/sgrb_search.html)
  - This table is updated weekly
- **Fermi GBM Terrestrial gamma-ray flash catalog released**
  - <http://fermi.gsfc.nasa.gov/ssc/data/access/gbm/tgf/>
- **Searchable version of 2<sup>nd</sup> Fermi-LAT Hard Source Catalog (>50 GeV) released**
  - <http://fermi.gsfc.nasa.gov/ssc/data/access/lat/2FHL/>

# Catalogs Drive Fermi Science



GBM 2, 4 and 6 year GRB catalogs

GBM SGR catalog

Online catalogs for TGF and Type 1 X-ray bursts

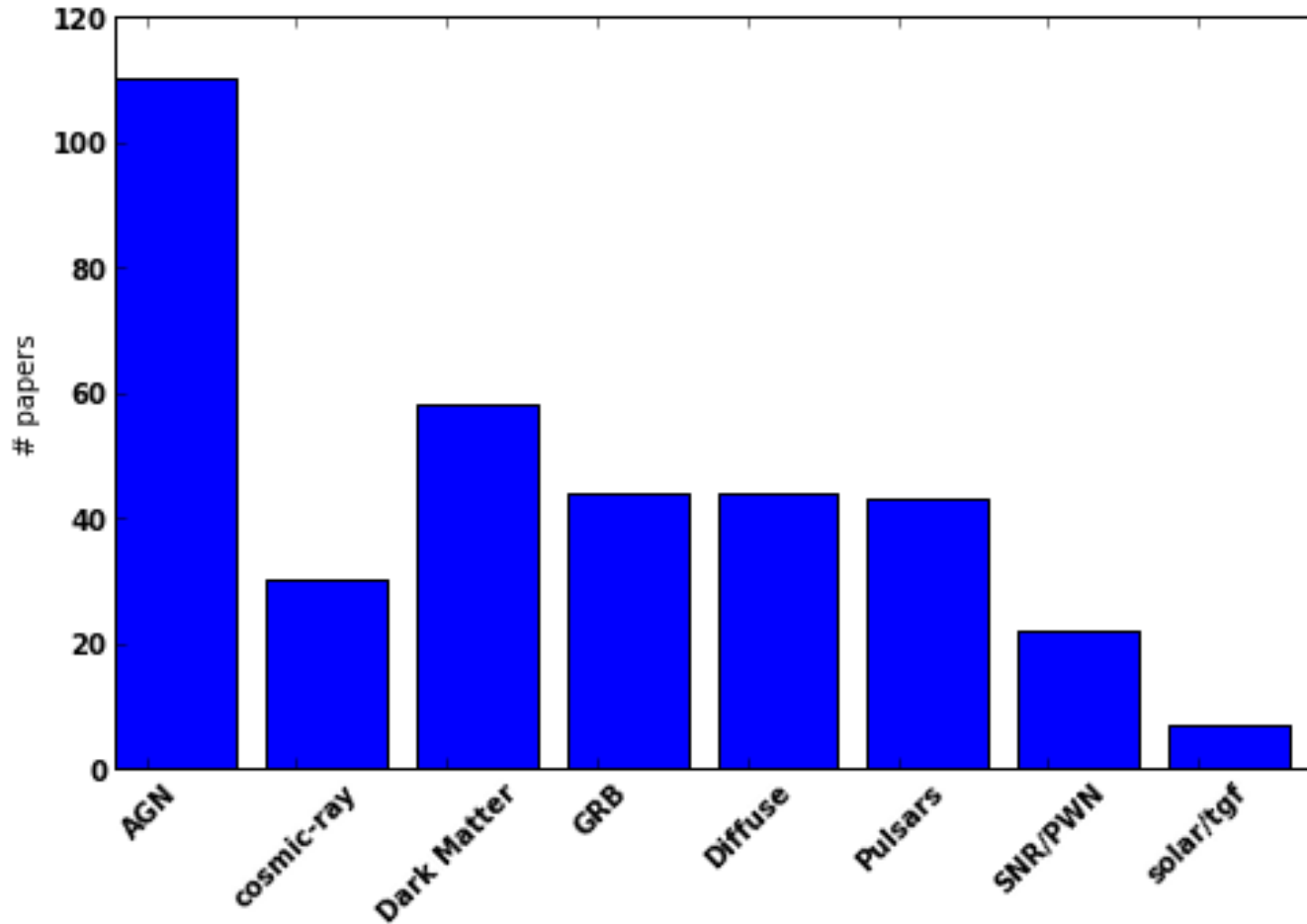
# Public Outreach

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- **NASA Press releases (coordinated by Fermi)**
  - **NASA's Fermi Mission Expands its Search for Dark Matter (August)**
  - **NASA's Fermi Telescope Helps Link Cosmic Neutrino to Blazar Blast (April)**
  - **NASA's Fermi Telescope Poised to Pin Down Gravitational Wave Sources (April)**
  - **NASA's Fermi Space Telescope Sharpens its High-energy Vision (January)**
- **Upcoming press releases**
  - **NASA's WISE, Fermi Missions Reveal a Surprising Blazar Connection (August)**
  - **Fermi Constellations (September)**

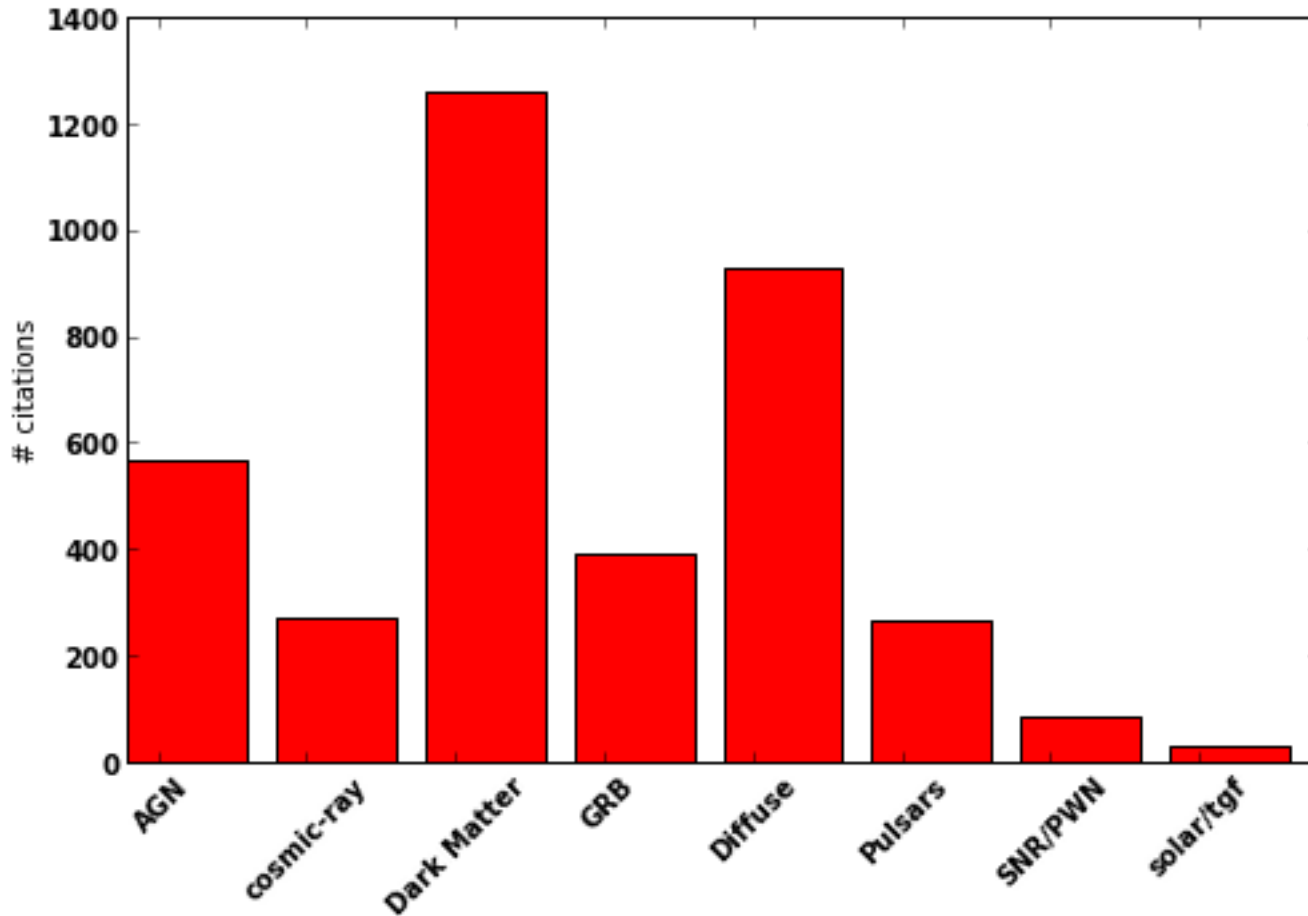
# Paper Status for 2015 - # papers

- From Jan-Dec 2015
  - 349 papers (second most productive year in mission)



# Paper Status for 2015 - # citations

- From Jan-Dec 2015
  - 349 papers with 3562 citations



# Questions?