

# Gamma-ray Astronomy

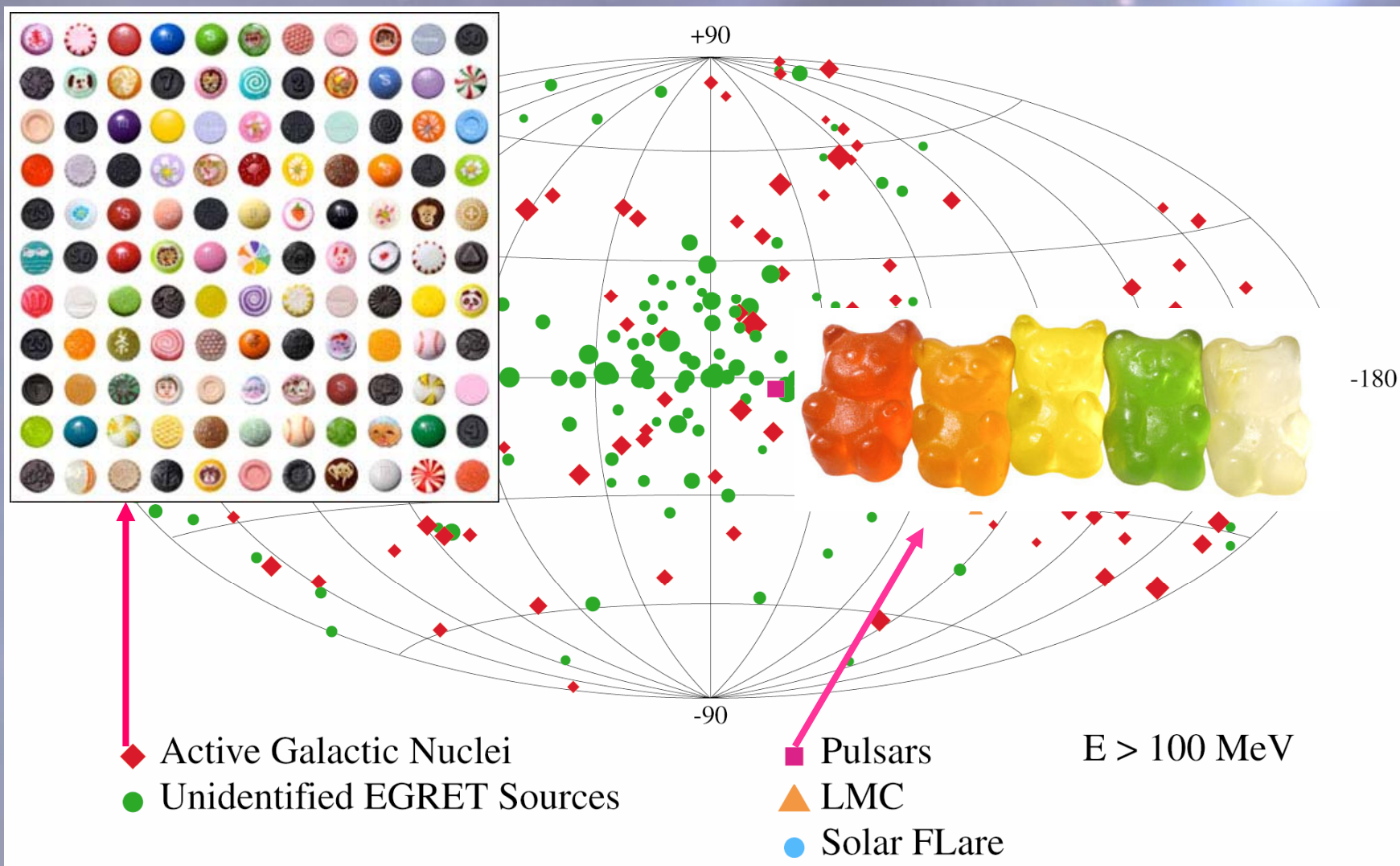
A satellite is shown in space, oriented diagonally. It has a central body with various instruments and two long, rectangular solar panel arrays extending outwards. The background is a deep blue space filled with numerous bright, multi-colored stars and nebulae, creating a rich, multi-hued star field.

**Looking for diversity in the  
gamma-ray sky**

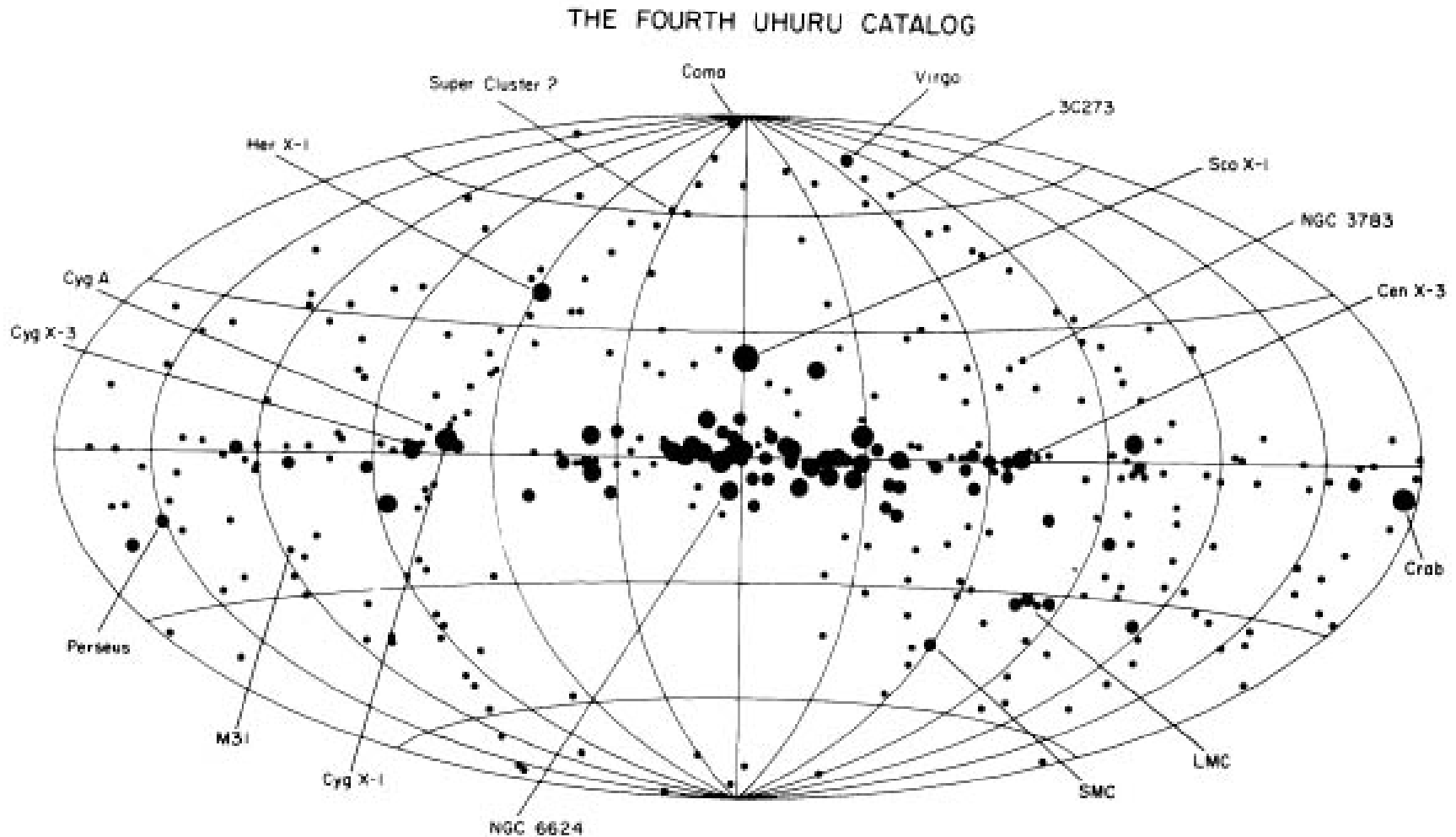
# The state of the art in $\gamma$ -ray astronomy

•271 sources

172 UGO



# UGOs' presence: is it anomalous ?



**339 sources**

**206 without ID**

**The presence of unidentified sources is normal,  
when a field is (still) in its infancy**

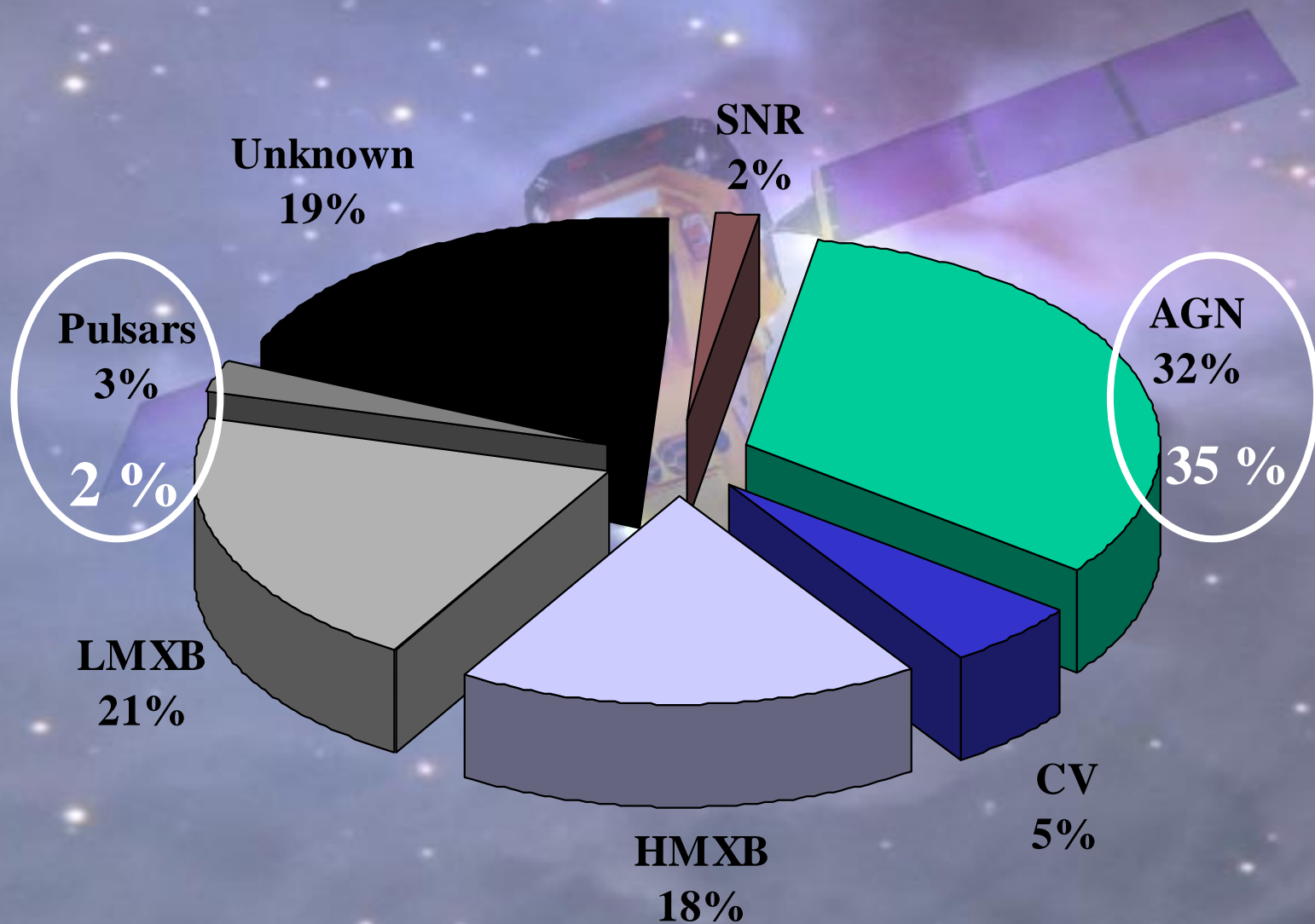
Genuinely **new**  
class of objects

Known objects with a  
**new** phenomenology

**Known**  
(catalogued)  
objects, floating  
in big error boxes

**Improving angular resolution is always beneficial**

# Integral source distribution



	<b>IBIS</b>	<b>EGRET</b>	<b>VHE</b>
<b>TOTAL</b>	<b>421</b>	<b>271</b>	<b>71</b>
<b>Extra</b>	<b>32%</b>	<b>35%</b>	<b>27% coverage</b>
<b>Pulsars</b>	<b>3%</b>	<b>2%</b>	<b>--</b>
<b>Snr/Pwn</b>	<b>2%</b>	<b>??</b>	<b>25%</b>
<b>Binaries</b>	<b>39%</b>	<b>??</b>	<b>7%</b>
<b>Others</b>	<b>5%</b>	<b>??</b>	<b>3%</b>
<b>UNID.</b>	<b>19%</b>	<b>63%</b>	<b>38%</b>

**The anomaly with  $\gamma$ -rays is the time needed (so far) to identify sources**



**and the very limited choice of source type**

**Big error boxes require additional inputs**

**variability is the only viable tool**

**If not, multiwavelength strategy**

**Long, complex, success is not guaranteed**

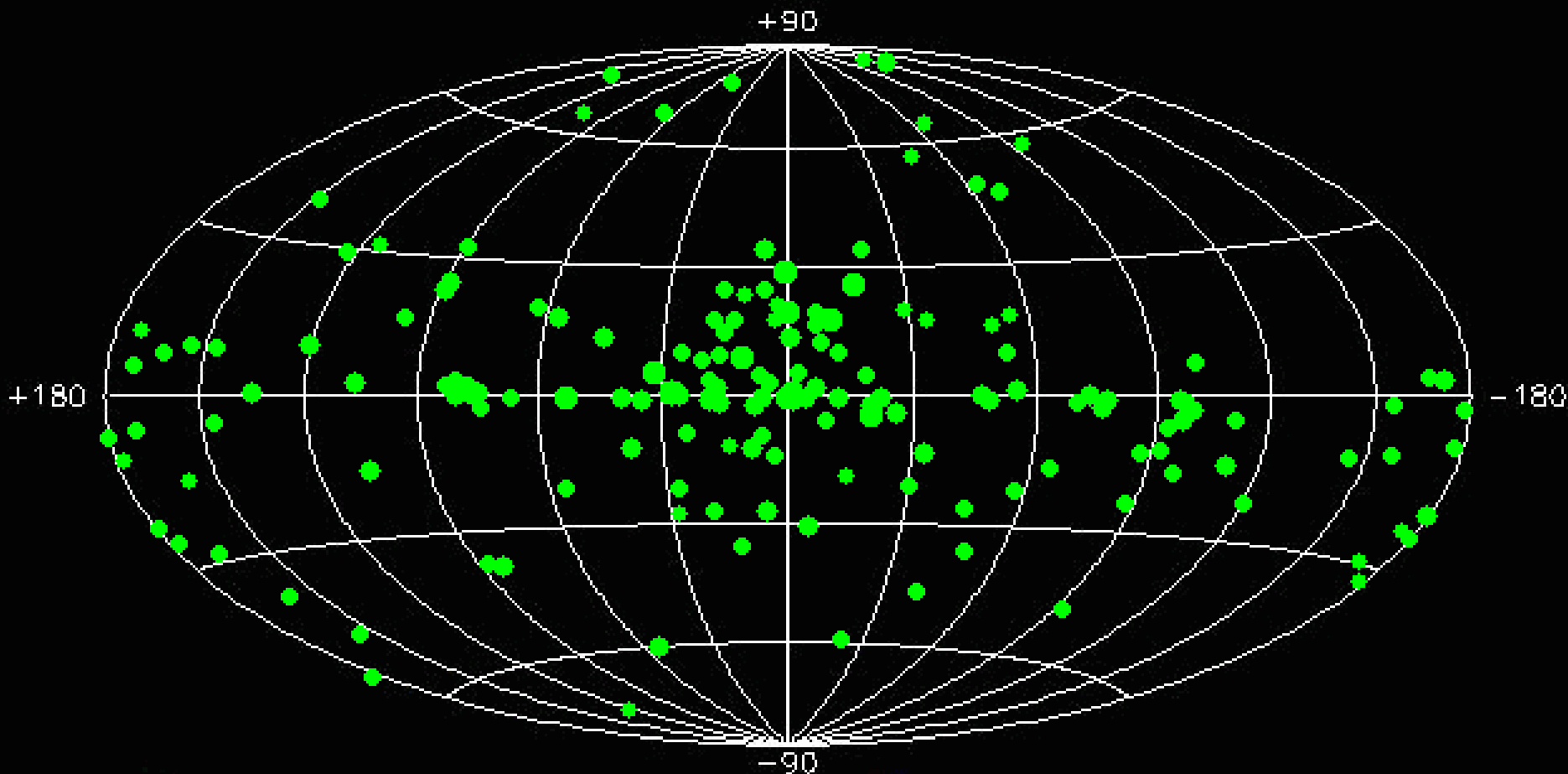
**ID rate: 1 per decade**





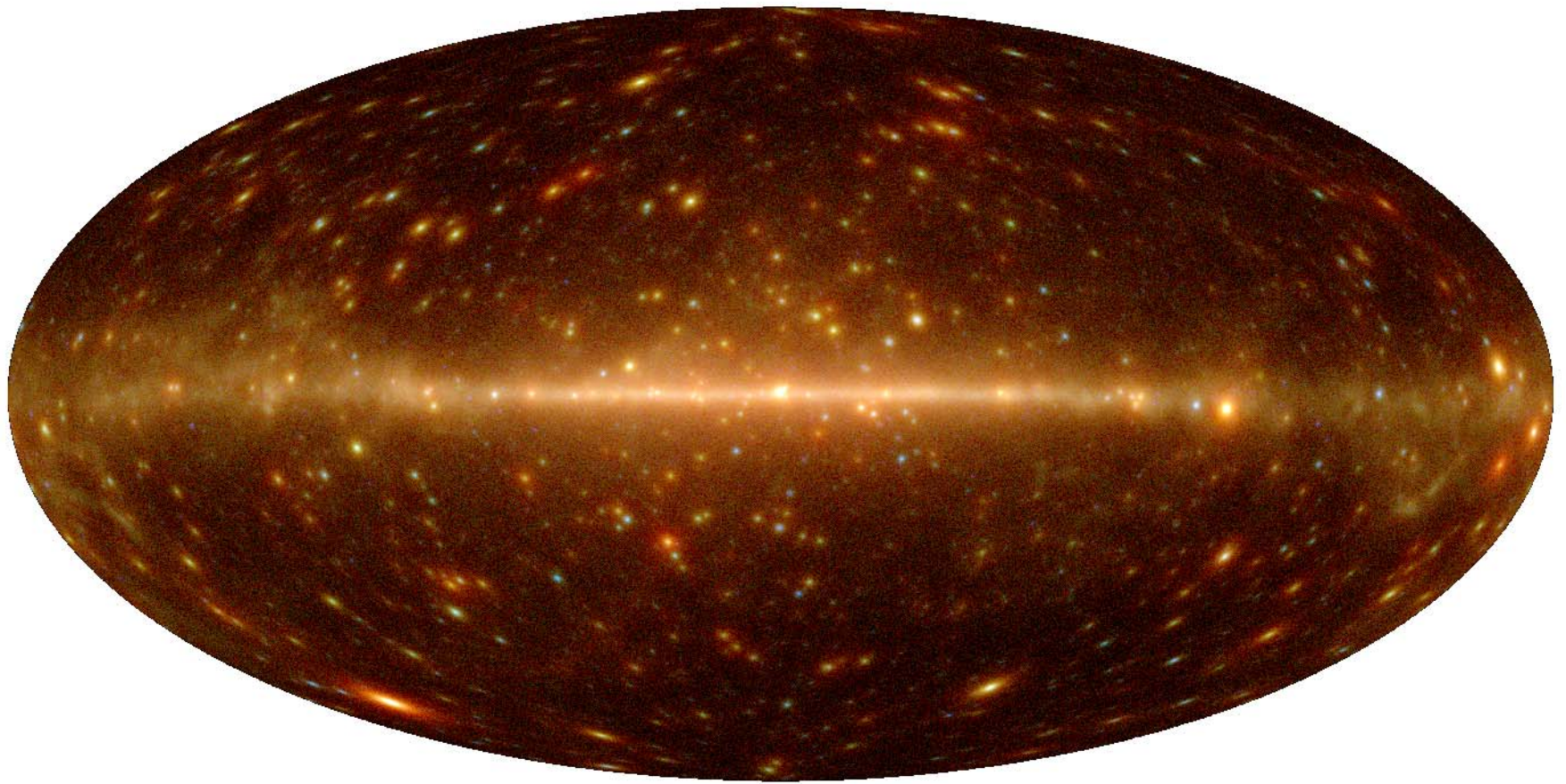
# Third EGRET Catalog

$E > 100$  MeV



- ◆ Active Galactic Nuclei
- Unidentified EGRET Sources

- Pulsars
- ▲ LMC
- Solar FLare



**Glast will detect hundreds of sources which will be positioned at a 5-10 arcmin level**

**Ars longa, vita brevis**



# Unidentified $\gamma$ -ray sources



**Similarity ?**



**With some degree of freedom**

# To decide what kind of candy gamma-ray photons like best

