بسم الله الرحمن الرحيم

AECENAR
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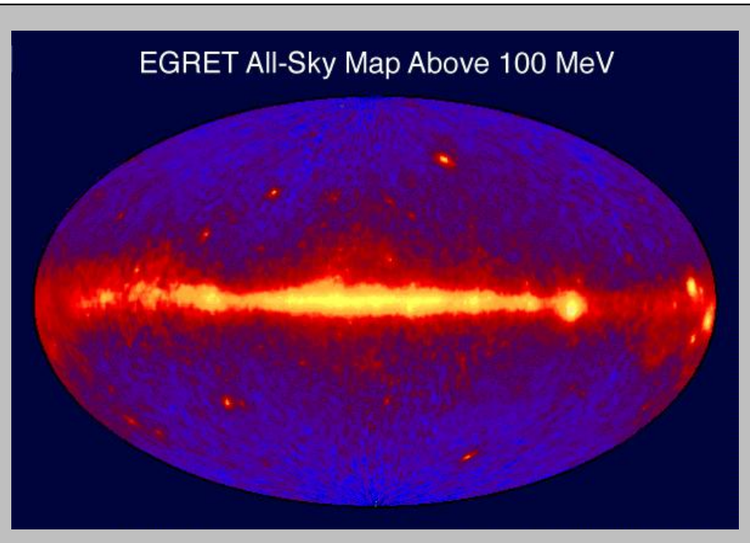
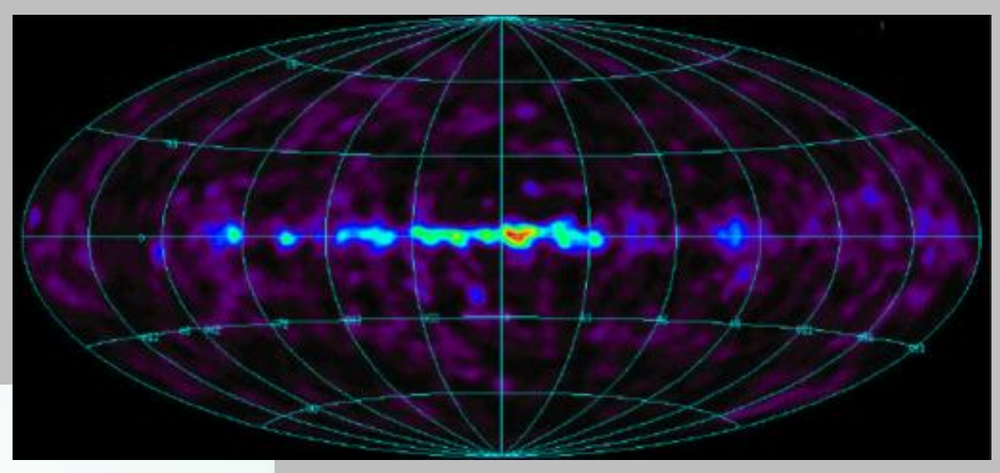
IAP
INSTITUTE FOR ASTROPHYSICS

Gamma Astronomy Measurement System (IAP-GAMS) 2018 – 2021 (planned)



The sky at energies above 100 MeV observed by the Energetic Gamma Ray Experiment Telescope(EGRET) of the Compton Gamma Ray Observatory(CGRO) satellite (1991–2000)

The sky at 1.8 MeV (COMPTEL Telescope)



$^{26}Al \rightarrow {}^{26}Mg^{*} + e^{-} + \bar{\nu}$

$^{26}Mg^{*} \rightarrow {}^{26}Mg + \gamma \quad (E_{\gamma} = 1{,}8\ MeV)$

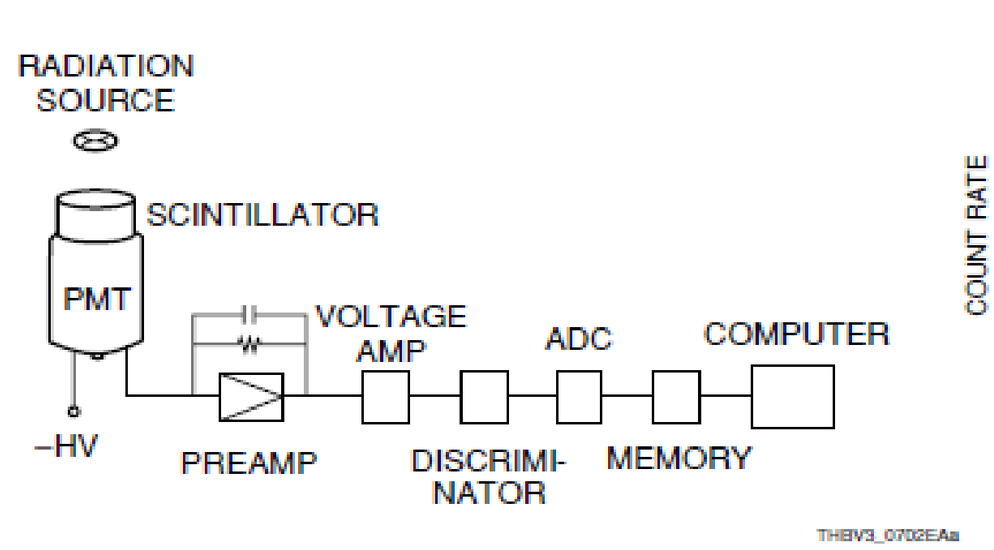


Figure 7-2: Block diagram for scintillation counting and pulse height distribution

Scinti-llators	Density (g/cm^3)	Emission Intensity (NaI(Tl) normalized at 100)	Emission Time (ns)	Peak Emission Wavelength (nm)	Applications
NaI(Tl)	3.67	100	230	410	Surveymeter, area monitor, gamma camera
BGO	7.13	15	300	480	PET
CsI(Tl)	4.51	45 to 50	1000	530	Surveymeter, area monitor
Pure CsI	4.51	<10	10	310	High energy physics
BaF2	4.88	20	0.9/630	220/325	TOF, PET, high energy physics
GSO:Ce	6.71	20	30	310/430	Area monitor, PET
Plastic	1.03	25	2	400	Area monitor, neutron detection
LSO:Ce	7.35	70	40	420	PET
PWO	8.28	0.7	15	470	High energy physics
YAP:Ce	5.55	40	30	380	Surveymeter, compact gamma camera

Table 7-1: Typical characteristics and applications of scintillators

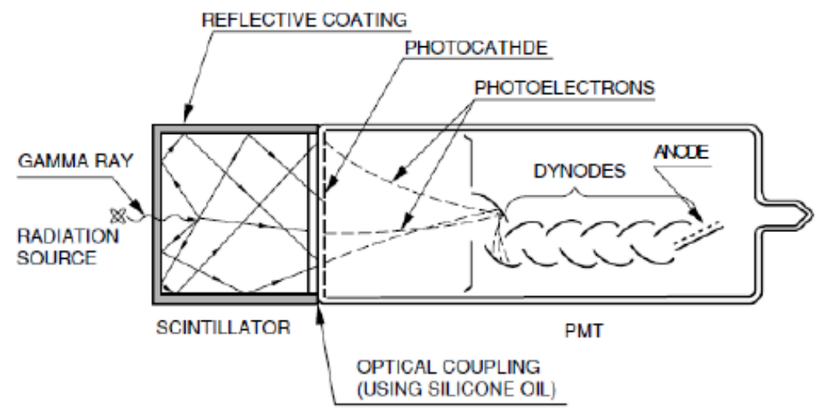


Figure 7-3: Gamma-ray detection using a NaI(Tl) scintillator and a photomultiplier tube