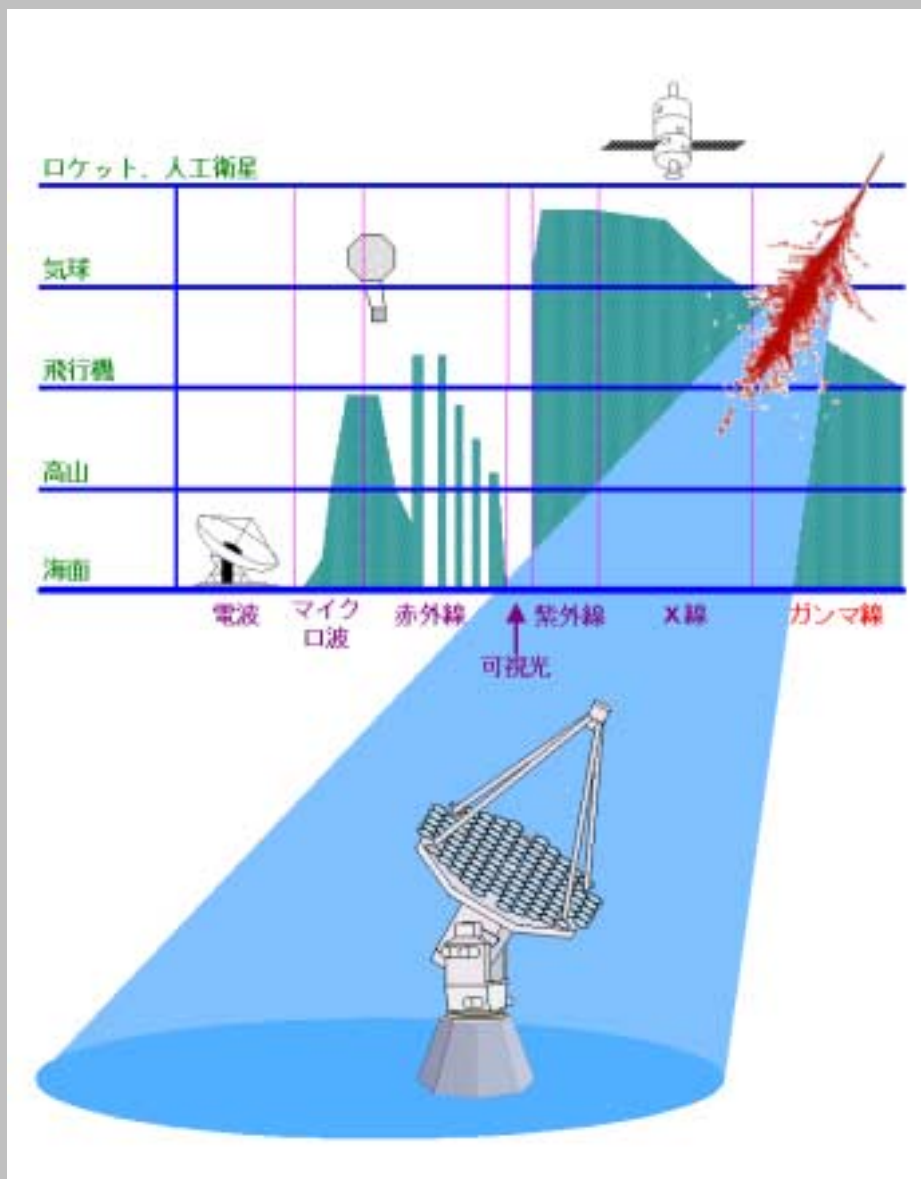


# カンガルー(CANGAROO)III 計画



277-8582

5-1-5

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# 宇宙の超高エネルギー現象を探る

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■ CANGAROO-III

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2,3

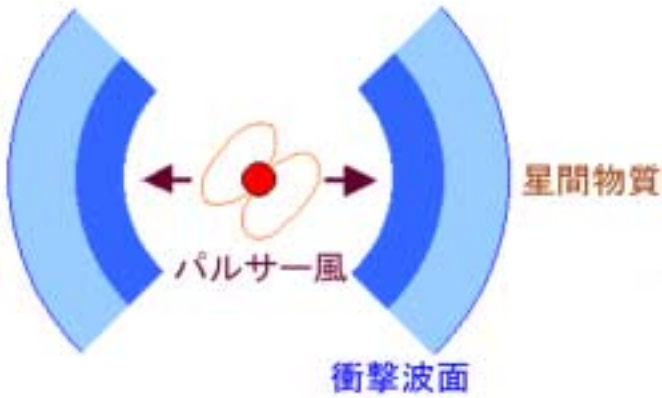
■

■

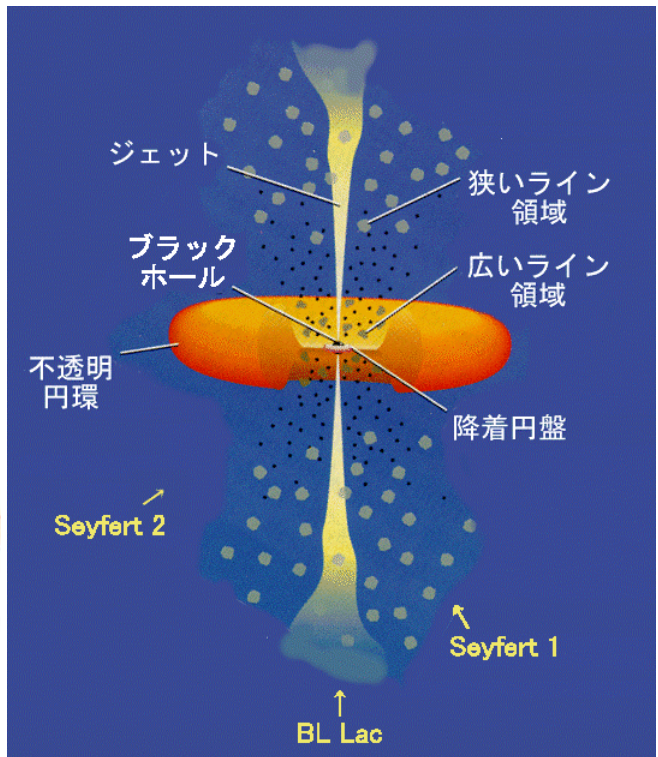
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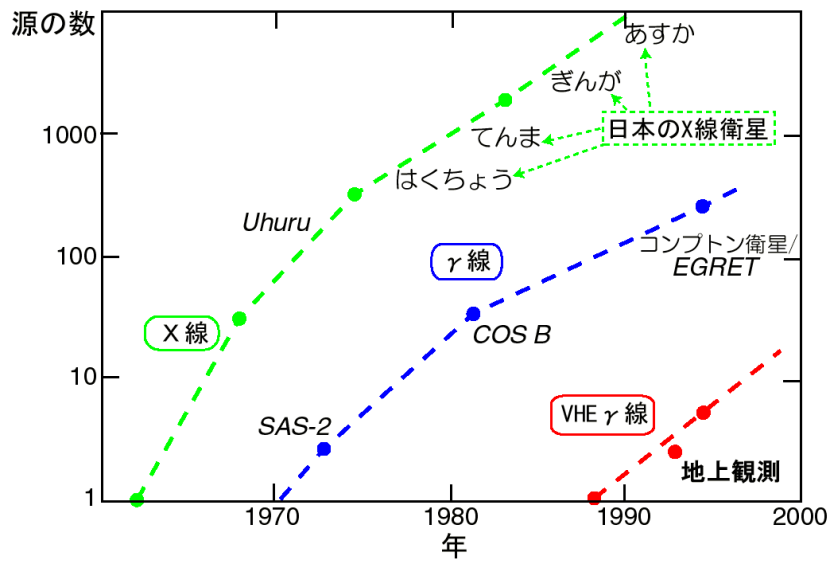
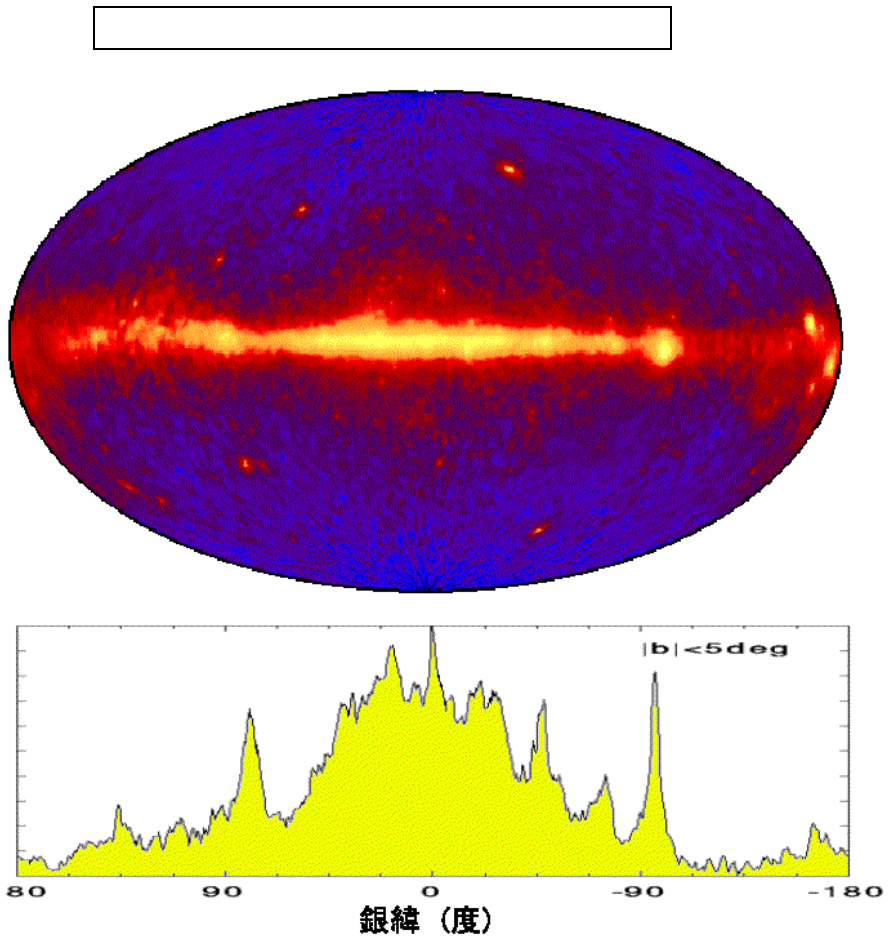
)

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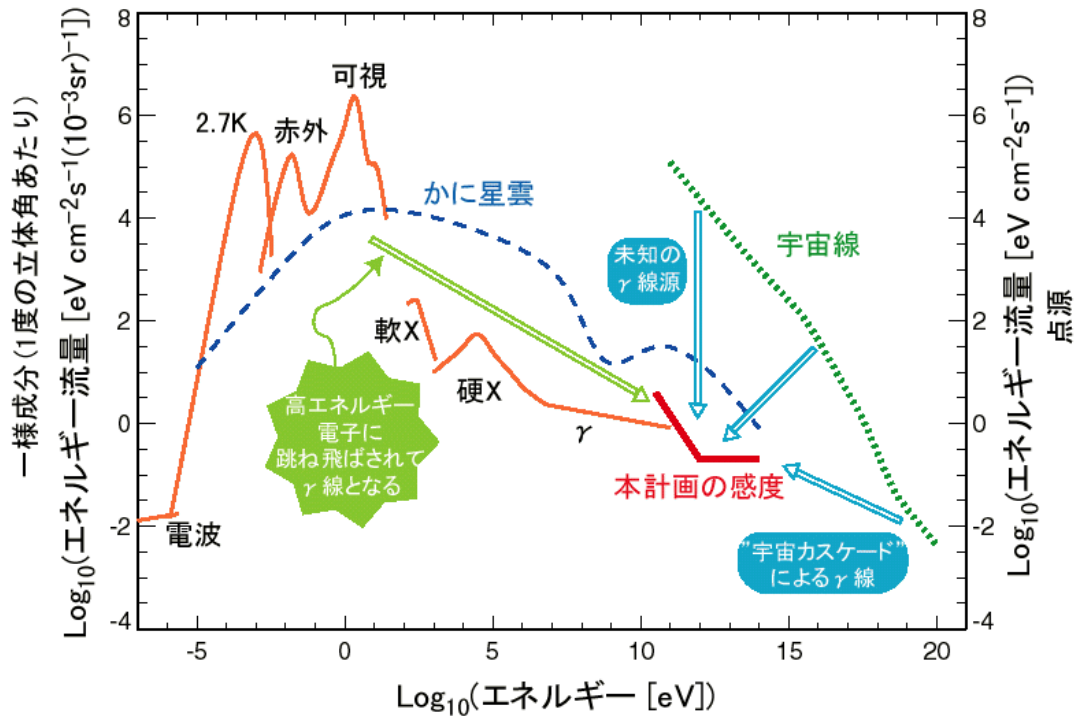


1 MeV (=  $10^6$ eV)  
 10 GeV (=  $10^{10}$ eV)  
 100 GeV (=  $10^{11}$ eV)





X

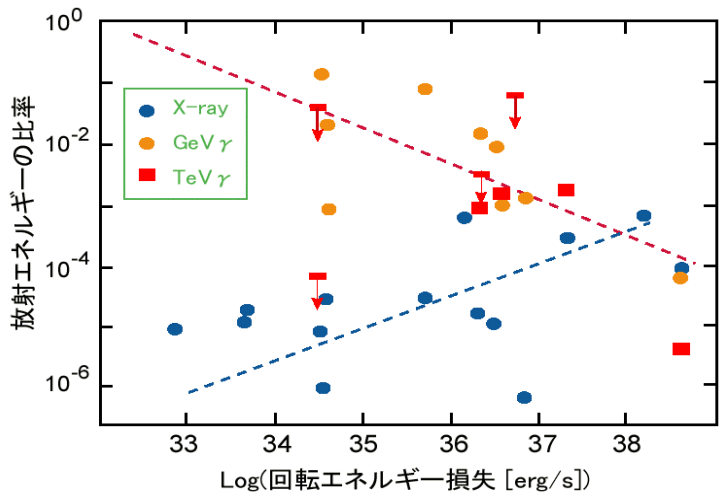


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 " "

$10^{20} \text{eV}$

**エネルギー収支勘定**

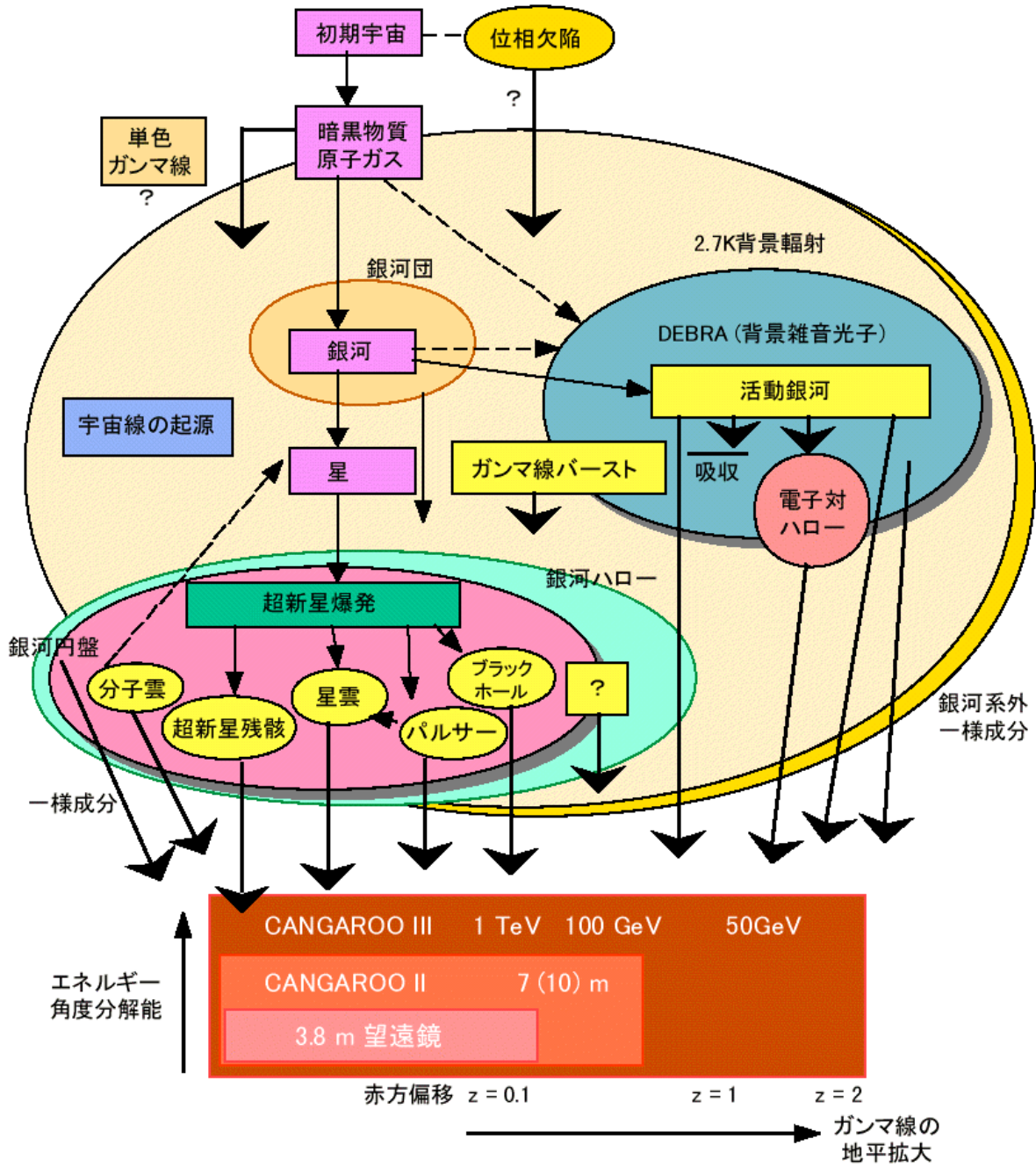
- 
- パルサー



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2000

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# 極限状態の物理を探る

■ ( )

■

■  $10^{13}$

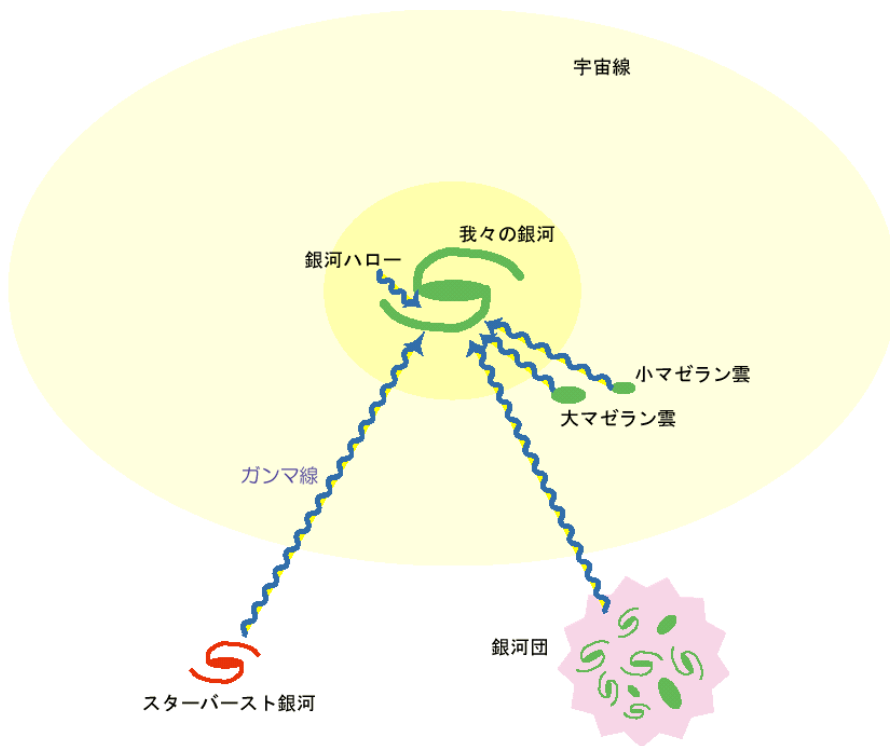
## 銀河系外へ拡大する、「宇宙の超高エネルギー素粒子(宇宙線)の起源」の解明

■

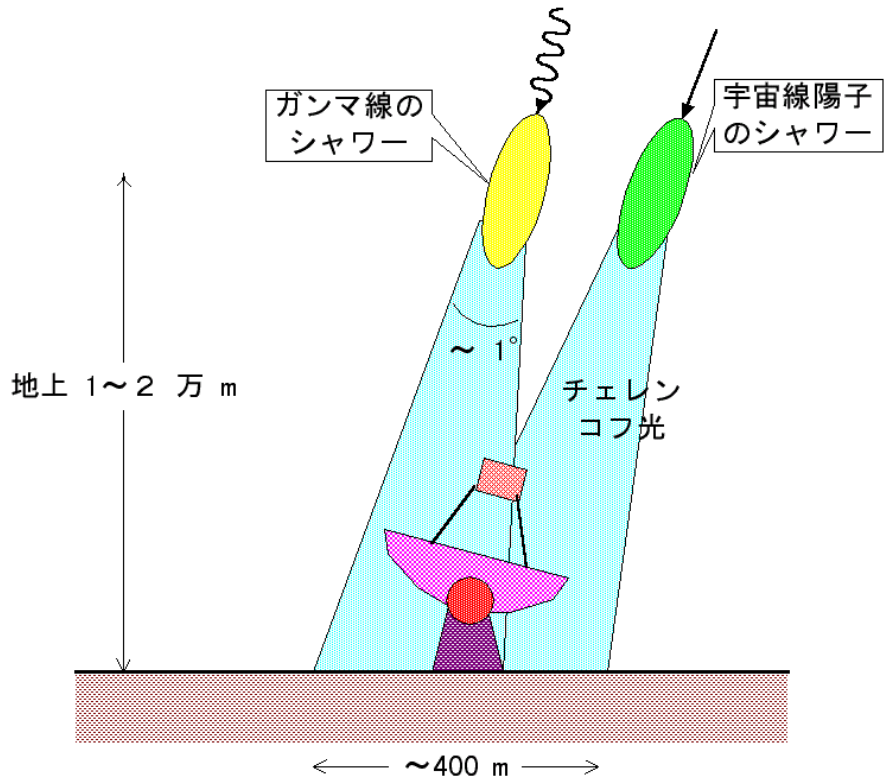
7

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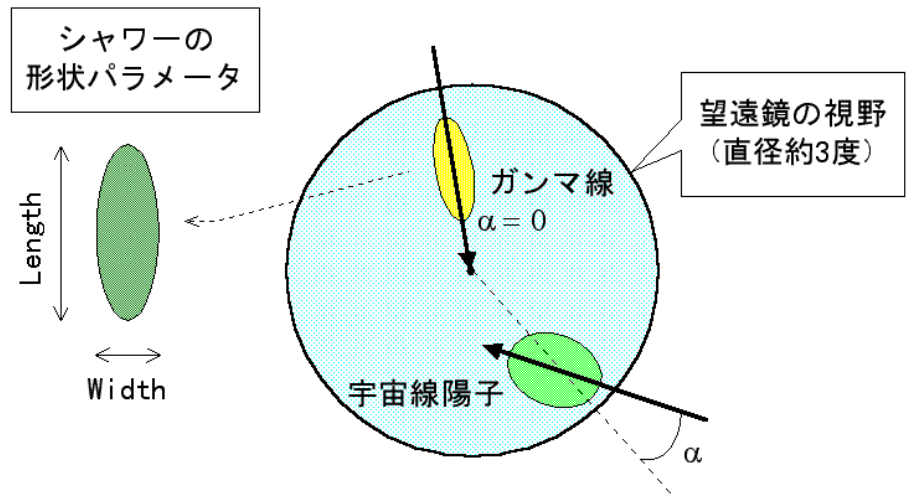


# 超高エネルギーガンマ線の検出方法



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## これまでの研究実績

- Whipple  
( GeV )
- (i) 1992 10
- (ii)
- (iii)  $10^{12}\text{eV}$  10 100 TeV (1TeV =

1 CANGAROO			
天体	エネルギー (TeV)	フラックス ( $10^{-12}\text{cm}^{-2}\text{s}^{-1}$ )	備考
かに星雲	7	0.80	$d=2$ kpc
ほ座パルサー	2.5	2.9	$d=0.5$ kpc
PSR 1706-44	2	3.5	$d=1.8$ kpc
PSR 1509-58	1.5	3.1	$d=4.2$ kpc
PSR 1055-52	2	< 0.95	$d=1.5$ kpc
超新星残骸1006	3	2.4	$d=2$ kpc
RXJ 1713.7-3946	1.8	5.3	$d=6$ kpc
W28	1.5	< 6.6	$d=2-3$ kpc
Cen A	2	< 1.5	$z=0.0018$
EXO 0423-084	2	< 1.1	$z=0.039$
PKS 2005-489	2	< 1.1	$z=0.071$
PKS 2316-423	2	< 1.1	$z=0.055$

(1) PSR B1706-44  
11 12

1 TeV

SN1006

(2)

GeV

TeV



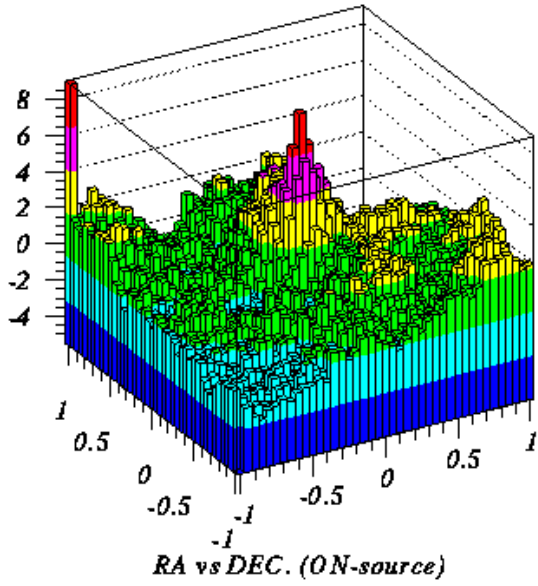
10 1992

CANGAROO 3.8m



(3)

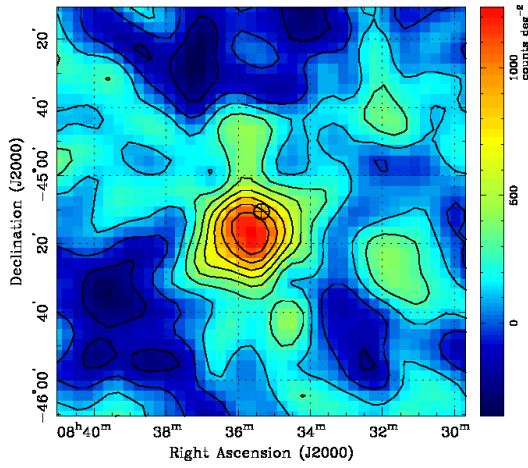
50 TeV



11

1706-44

Vela 1993 - 1995



2

(4)

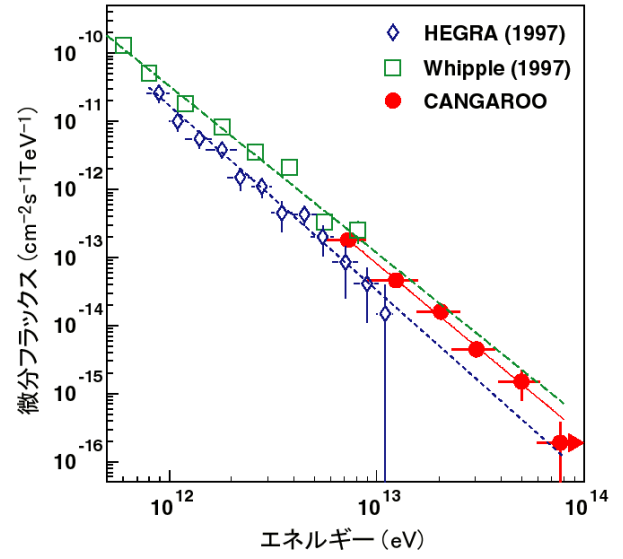
13

SN1006

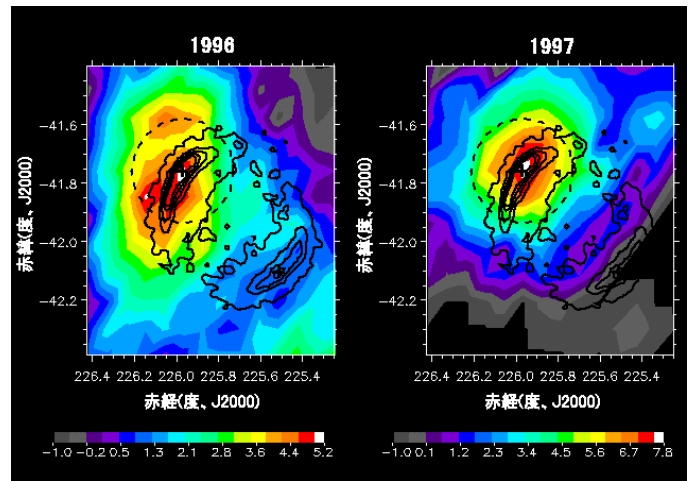
TeV

100 TeV

14



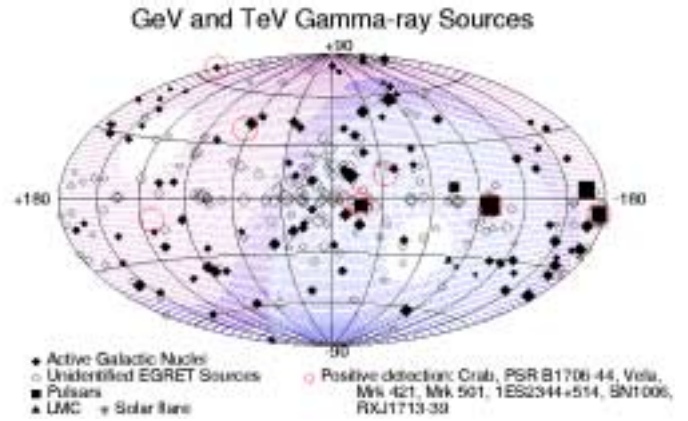
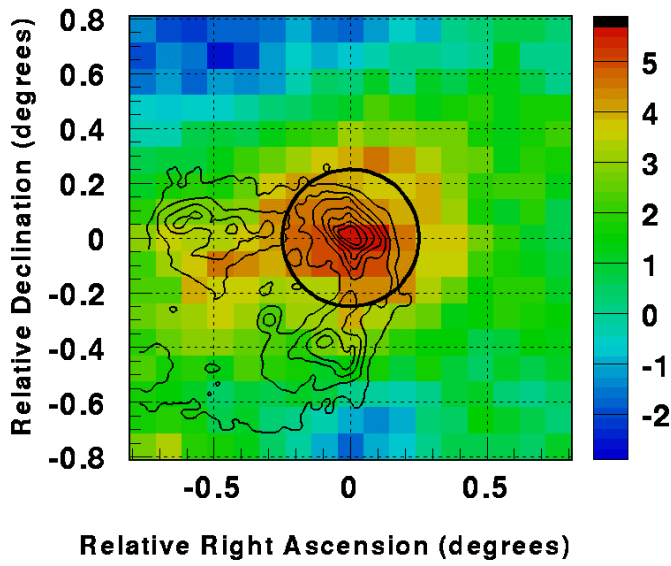
13



14

1006

X

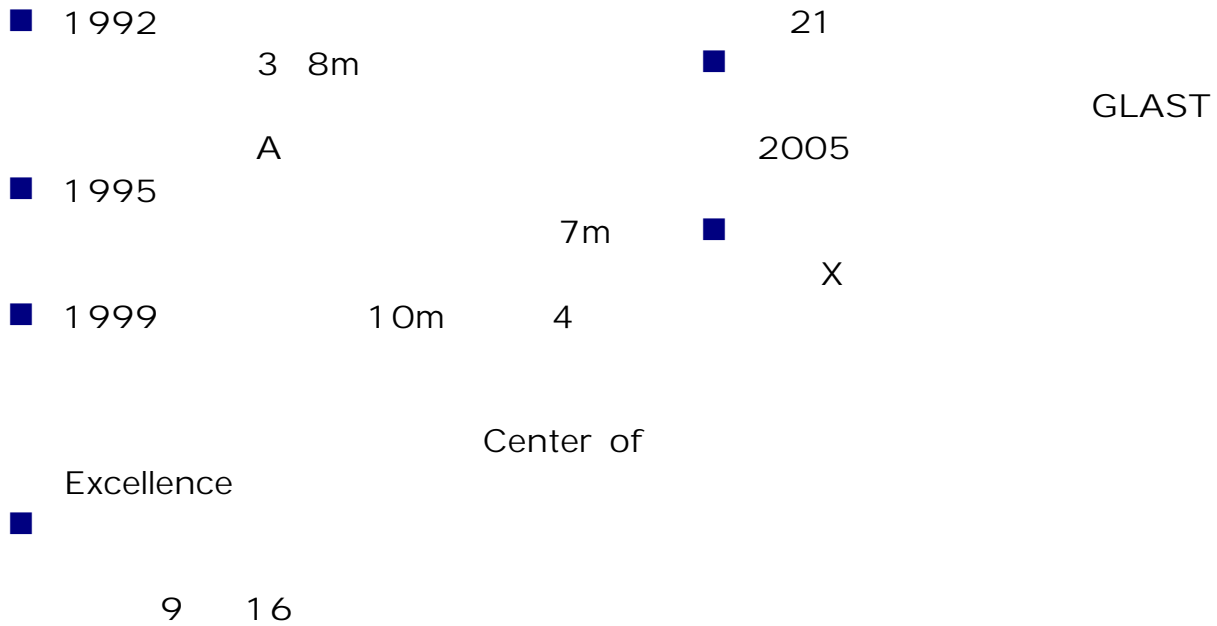


16 GeV TeV  
CANGAROO

15 1006

X

**本計画と諸外国における研究情勢**





CANGAROO-I  
(3.8m)

1992

一歩一歩、かつ緊急に!

CANGAROO-II  
(7/10m)

1999 3 7m

2000  
3 10m  
COE



CANGAROO-III  
(10m x 4)

COE





## CANGAROO

(Collaboration of Australia and Nippon  
for a GAMMA Ray Observatory in the Outback)

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