NANTEN2

Large scale study at sub-mm wavelengths

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NANTEN2 Project

- 2003 October:
  End of operation of NANTEN @LCO
- 2004 June:
  Installation of astrodome @Atacama
- 2004 October:
  Assembly of new dish @Atacama
- 2004 November 25:
  Inauguration (please join us!)
- 2004 December:
  Start of test operation

NANTEN2 Project

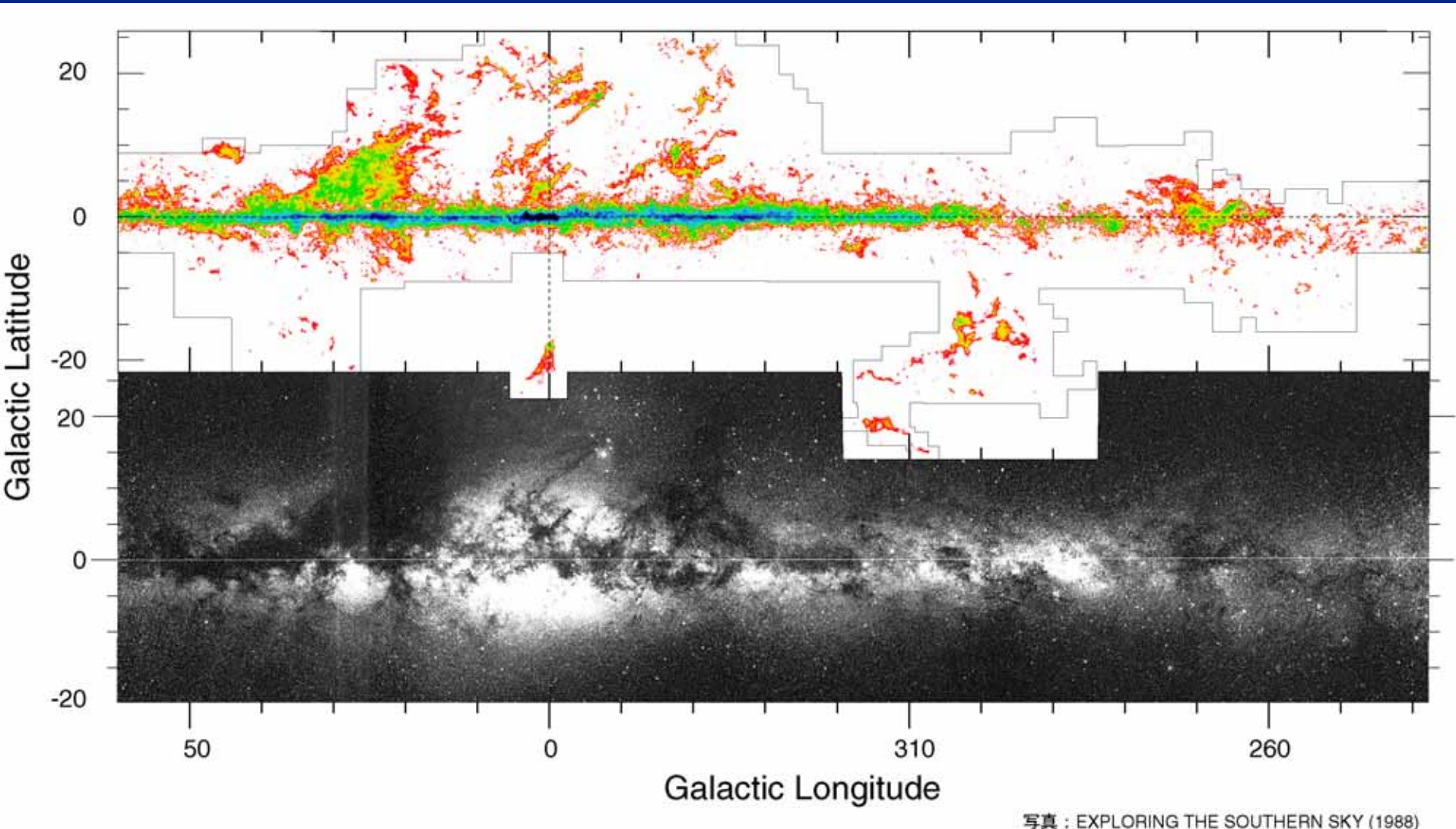
- Nagoya University:
  Y.Fukui,A.Mizuno,T.Onishi,N.Mizuno
- Osaka Prefecture University:
  H.Ogawa, Y.Yonekura
- University of Cologne: J.Stutzuki
- University of Bonn: U.Mebold
- Seoul National University: B.-C.Koo
- University of Chile: L.Bronfmann

NANTEN2 Project

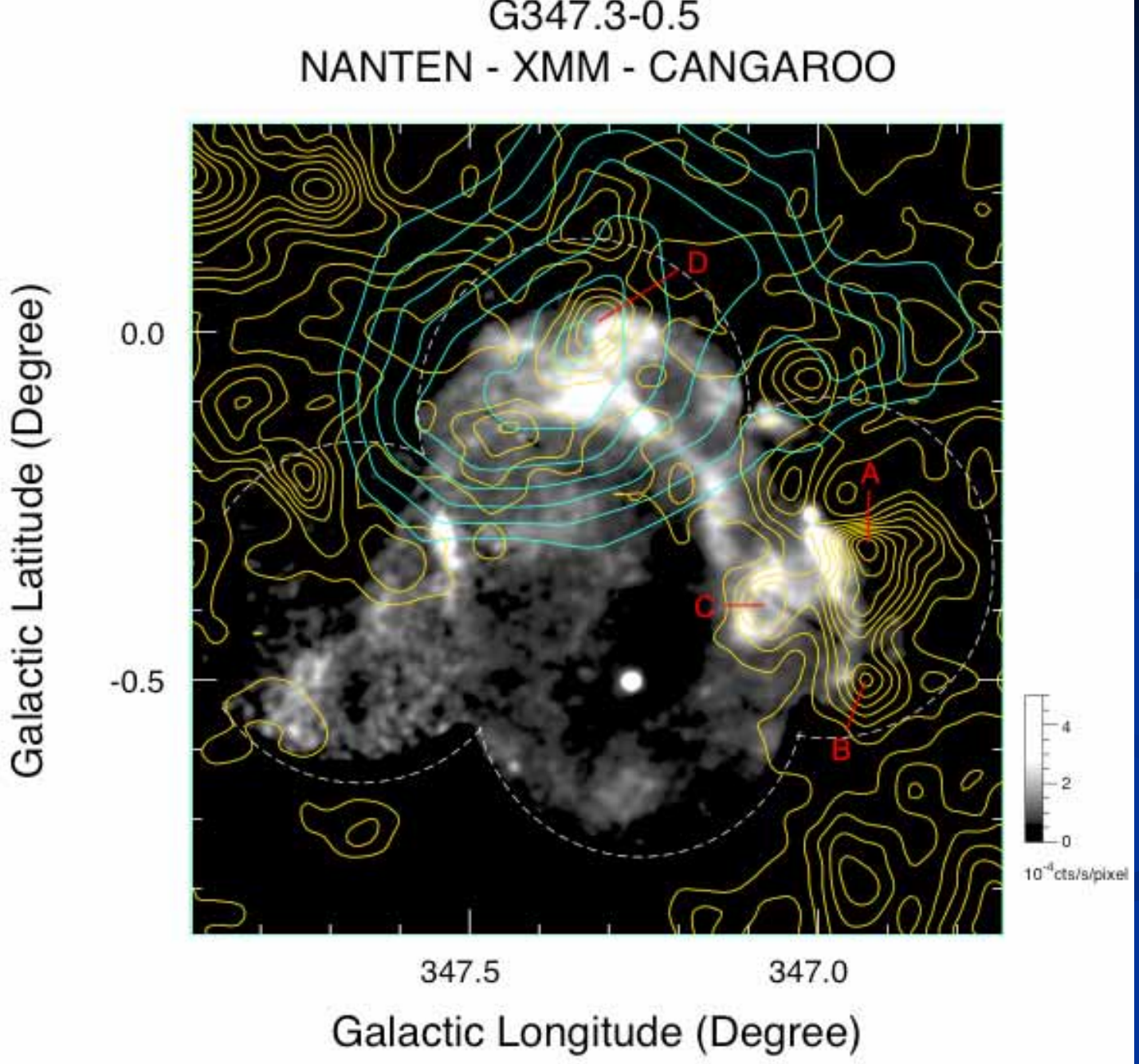
- Large-scale sub-mm survey
  in high-J CO and CI:
  Milky Way, Magellanic Clouds, Nearby galaxies
- Frequency bands:
  SMART (8 beam receiver) @500 and 800 GHz
  single beam receiver + OTF @100-350 GHz
- Main dish:
  15 microns rms or better
- Astrodome with membrane:

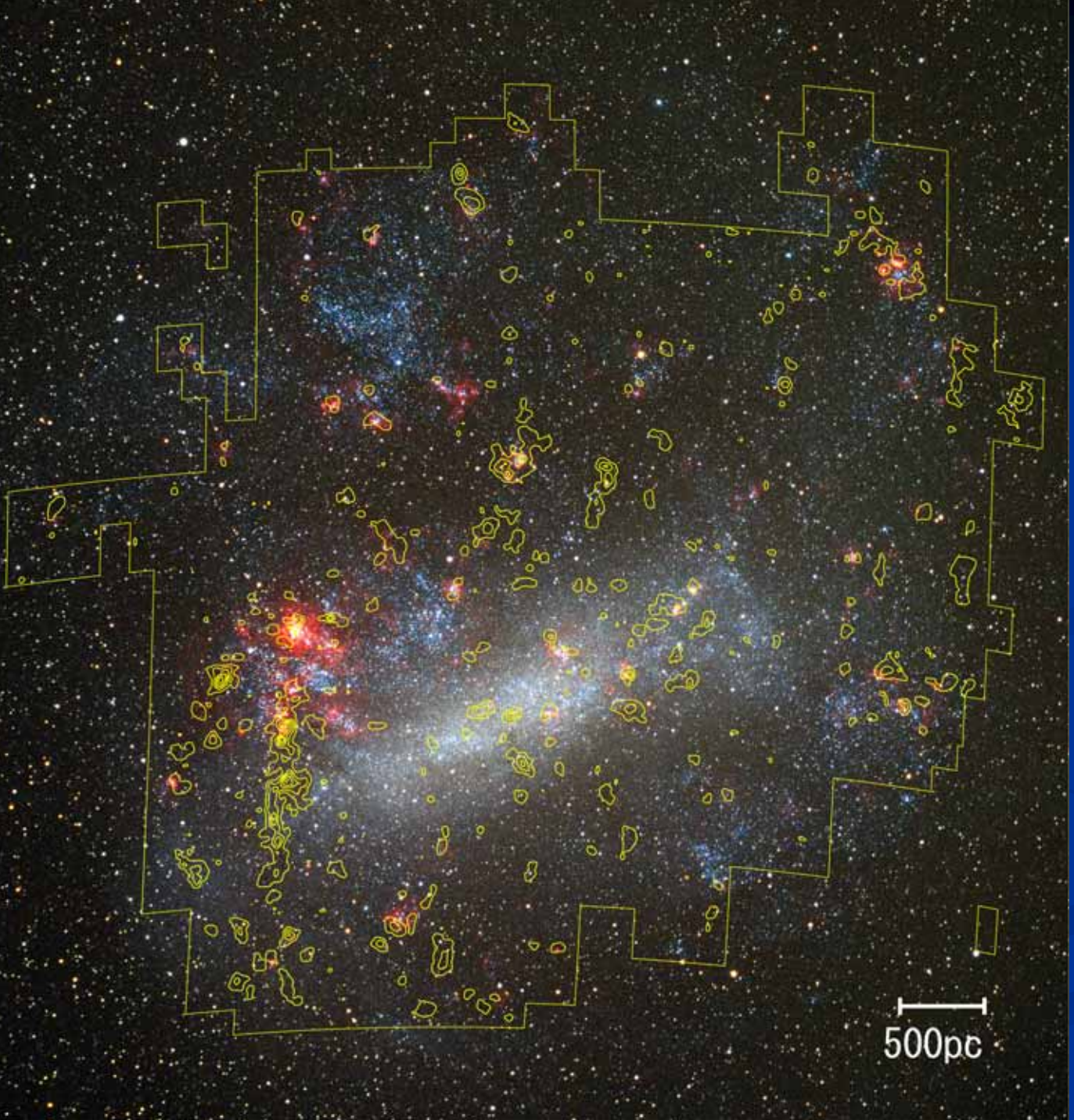
Galactic Plane Survey

- ^{12}CO(J=1-0), Grid size ~ 4′ (|b|<5°), 8′ (5°<|b|<10°)
- Integ. time (typ) ~5sec/point, 1,100,000 observed points



写真：EXPLORING THE SOUTHERN SKY (1988)

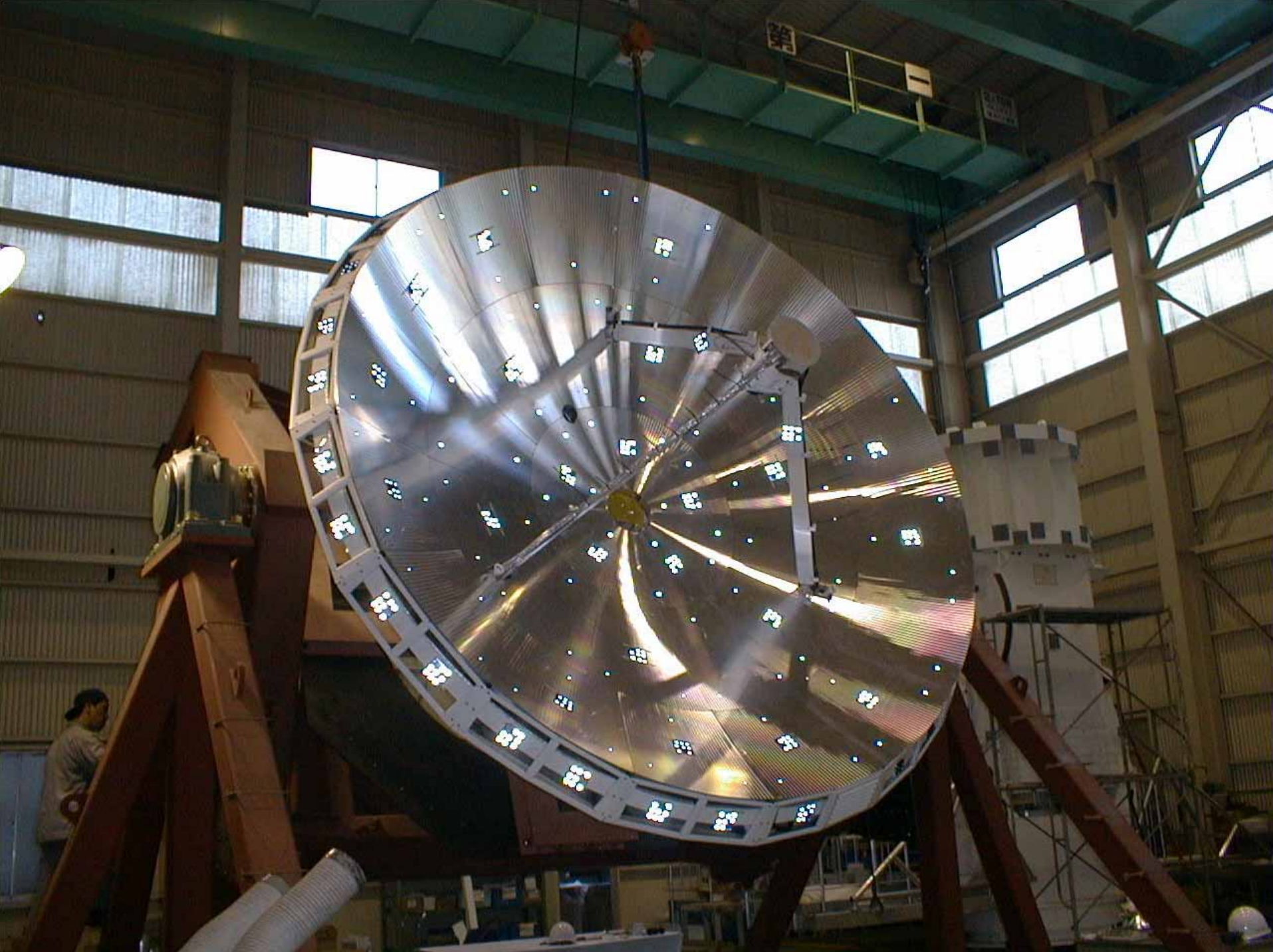

G347.3-0.5
NANTEN - XMM - CANGAROO
Galactic Latitude (Degree)
0.0
-0.5
347.5
347.0
Galactic Longitude (Degree)
A
B
C
D
4
2
0
10^-4 cts/s/pixel



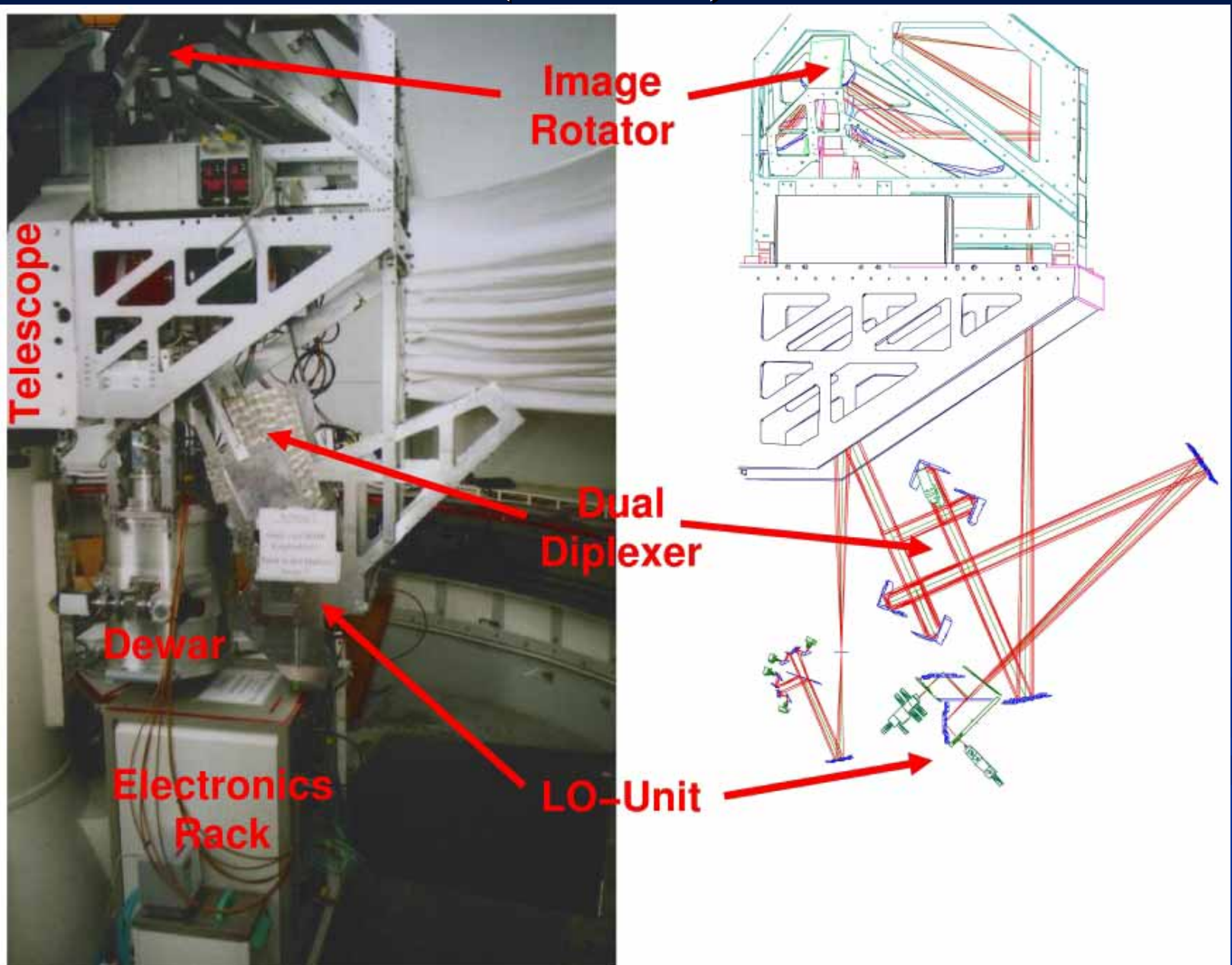
270 CO clouds identified ($M > 10^4\ M_{sun}$)

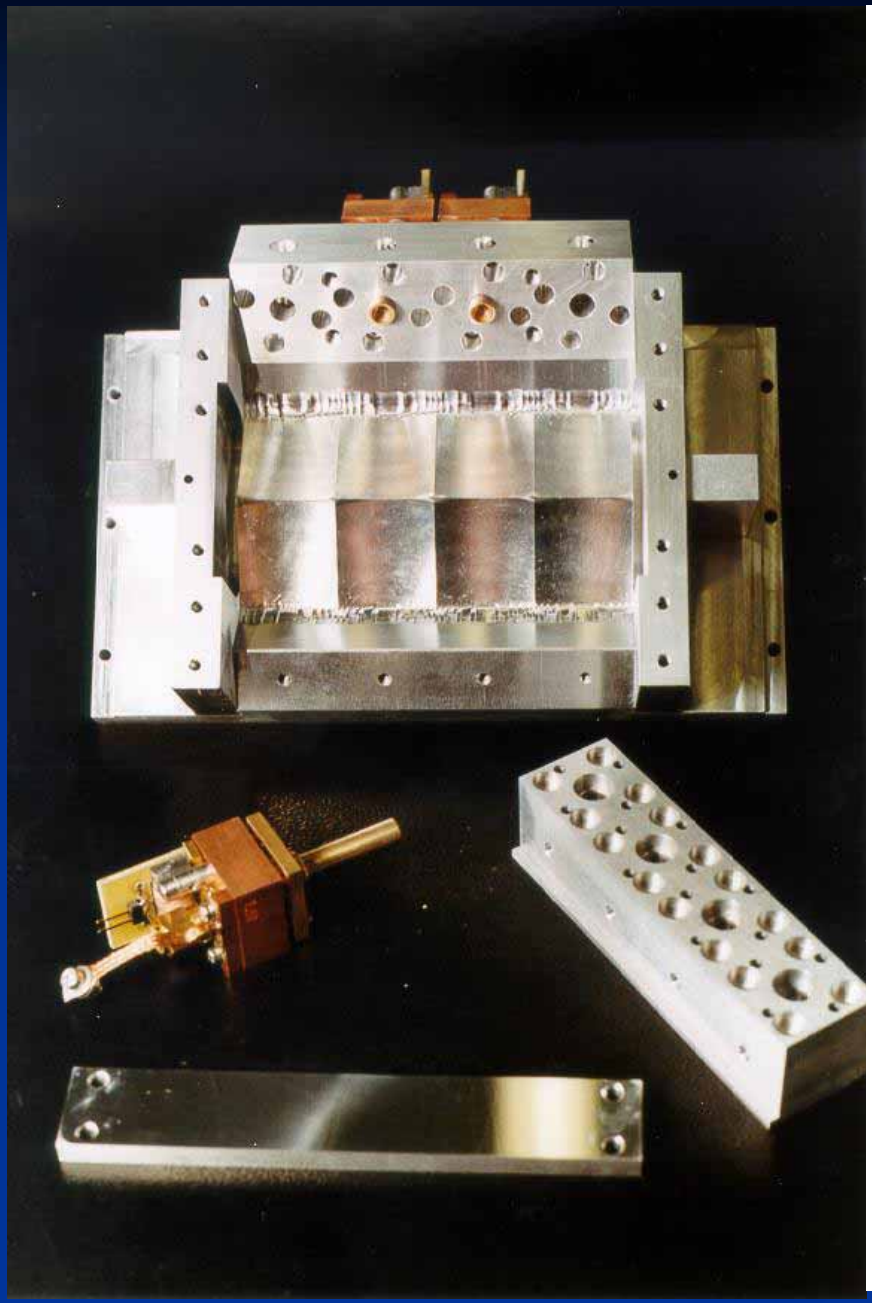
Total molecular mass

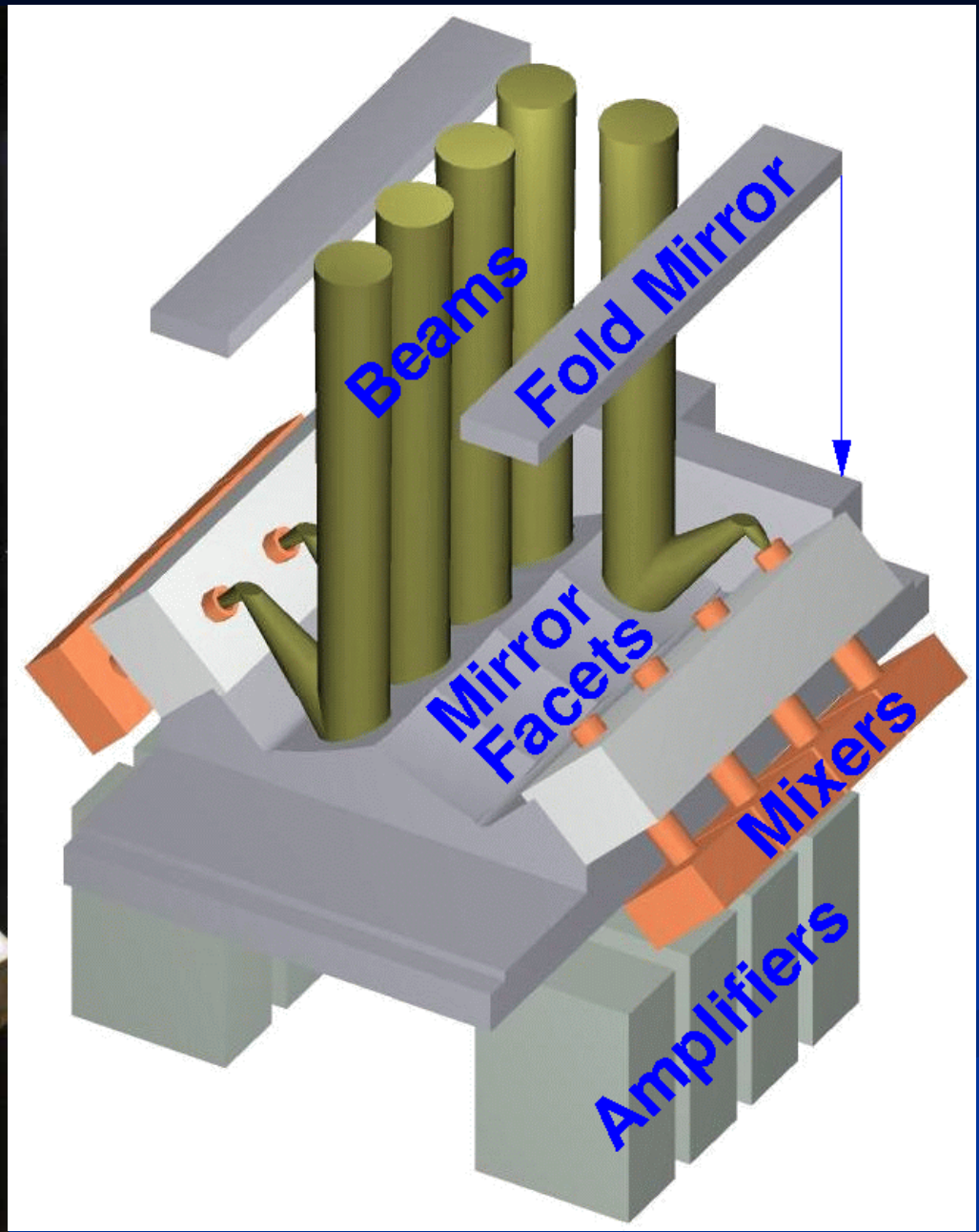
$\sim 7 \times 10^7\ M_{sun}$



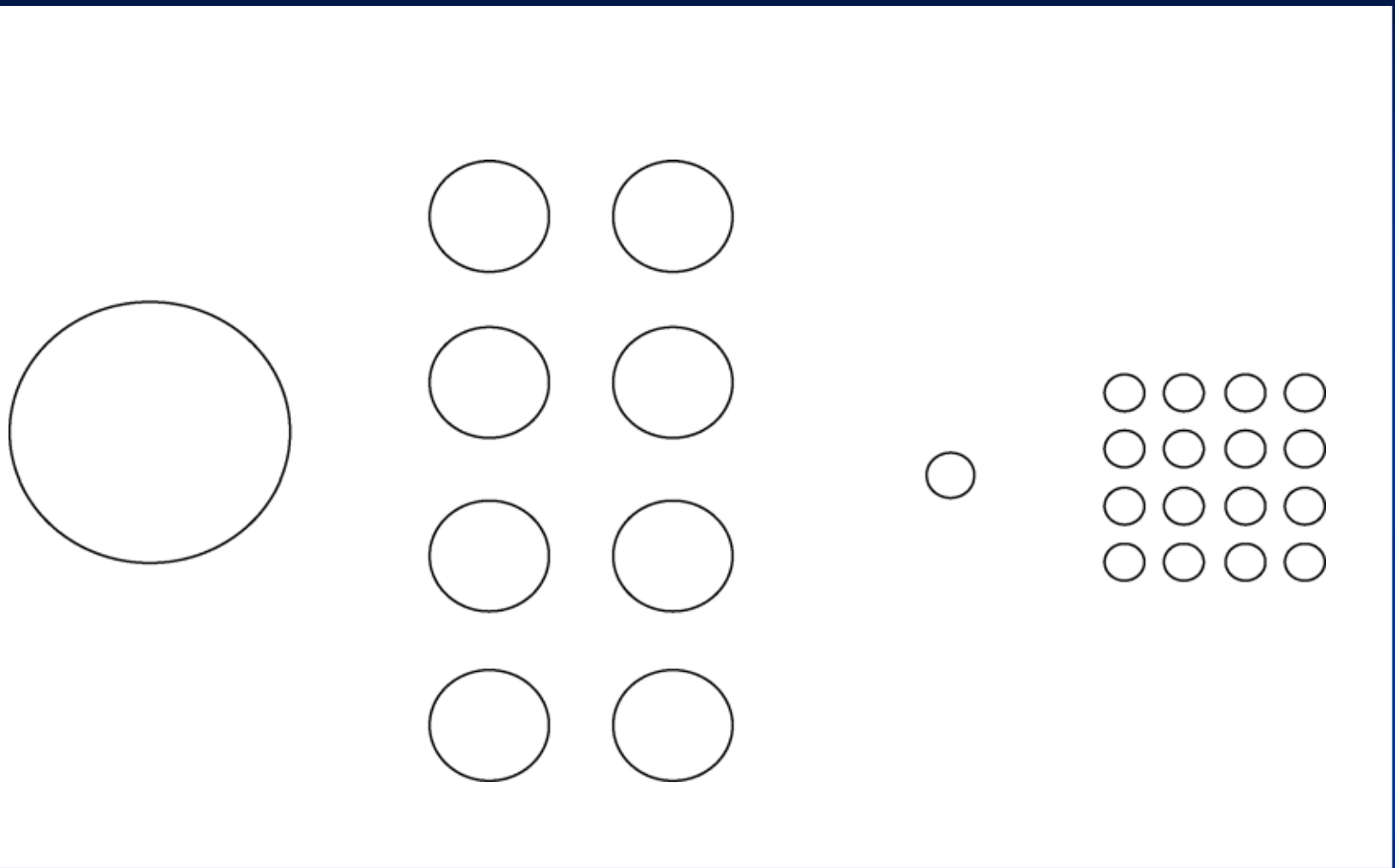
Sub-Millimeter Array Receiver for Two frequencies (SMART)






Beams
Fold Mirror
Mirror Facets
Mixers
Amplifiers

Comparing beamsizes



AST/RO NANTEN2 ASTE APEX

NANTEN Publications

- 1999 NANTEN Special issue 1
  PASJapan 51 No.6
- 2001 NANTEN Special issue 2
  PASJapan 53 No.6
- 2005 NANTEN Special issue 3
  PASJapan 57 in preparation
- And others