



# The DA240 Radio Galaxy and its Influence on Canadian Radio Astronomy

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# NRAO 300 ft telescope BDFL Confused Regions from 1972

- My introduction to the DA survey - 1973 at the Leiden Observatory

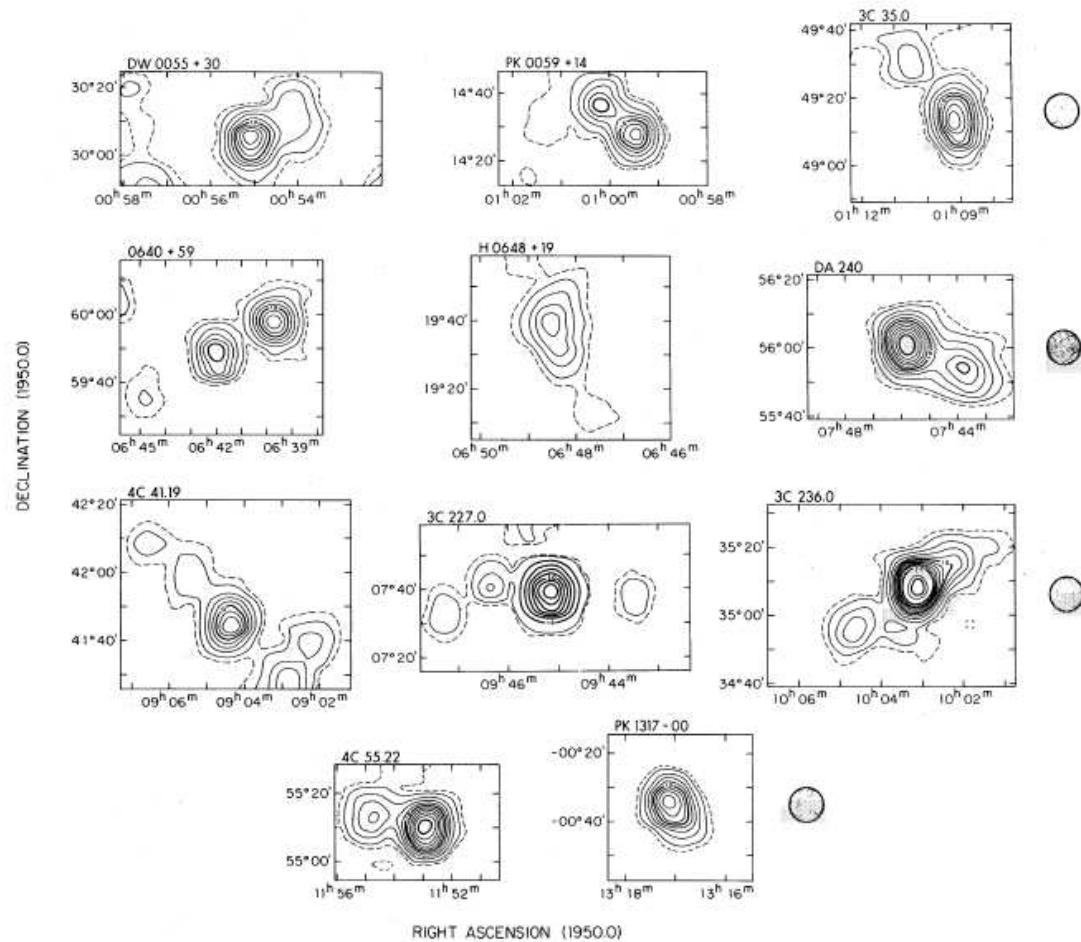


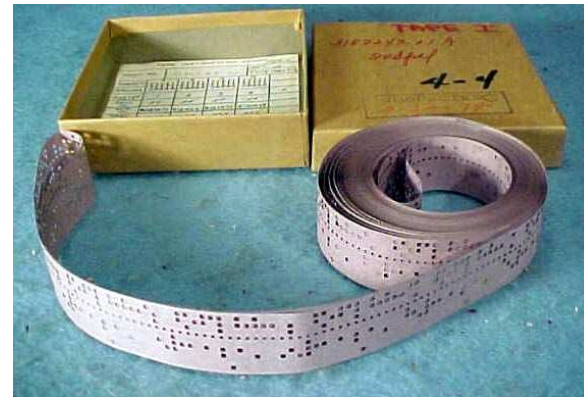
FIG. 5. Contour maps from the full-beam data of 18 large-diameter sources and confused regions.

# Galt-like Process of making a WSRT 'Radio Photo' in 1974

- Get 9-track 1800 BPI tape from Leiden University IBM 360 central computer with 256x256 array of radio data
- Take 9-track tape to IBM 1800 (process-control) computer at Leiden University Medical Faculty building
- Play 9-track tape and look at image on approximately 5 x 7 cm CRT display
- Write out image display data on to a reel of paper tape
- Take paper tape to small computer up under the roof of the old Leiden Observatory
- Attach a piece of photographic film to an Edison-like cylinder
- Read paper tape through this computer, causing a small light beam to move along the cylindrical film
- Run the exposed piece of film through chemical developer and make prints from the resulting negative

# Early 1970s Storage Media

- Left: IBM System 360 with 9-track tapes; Right: roll of paper tape

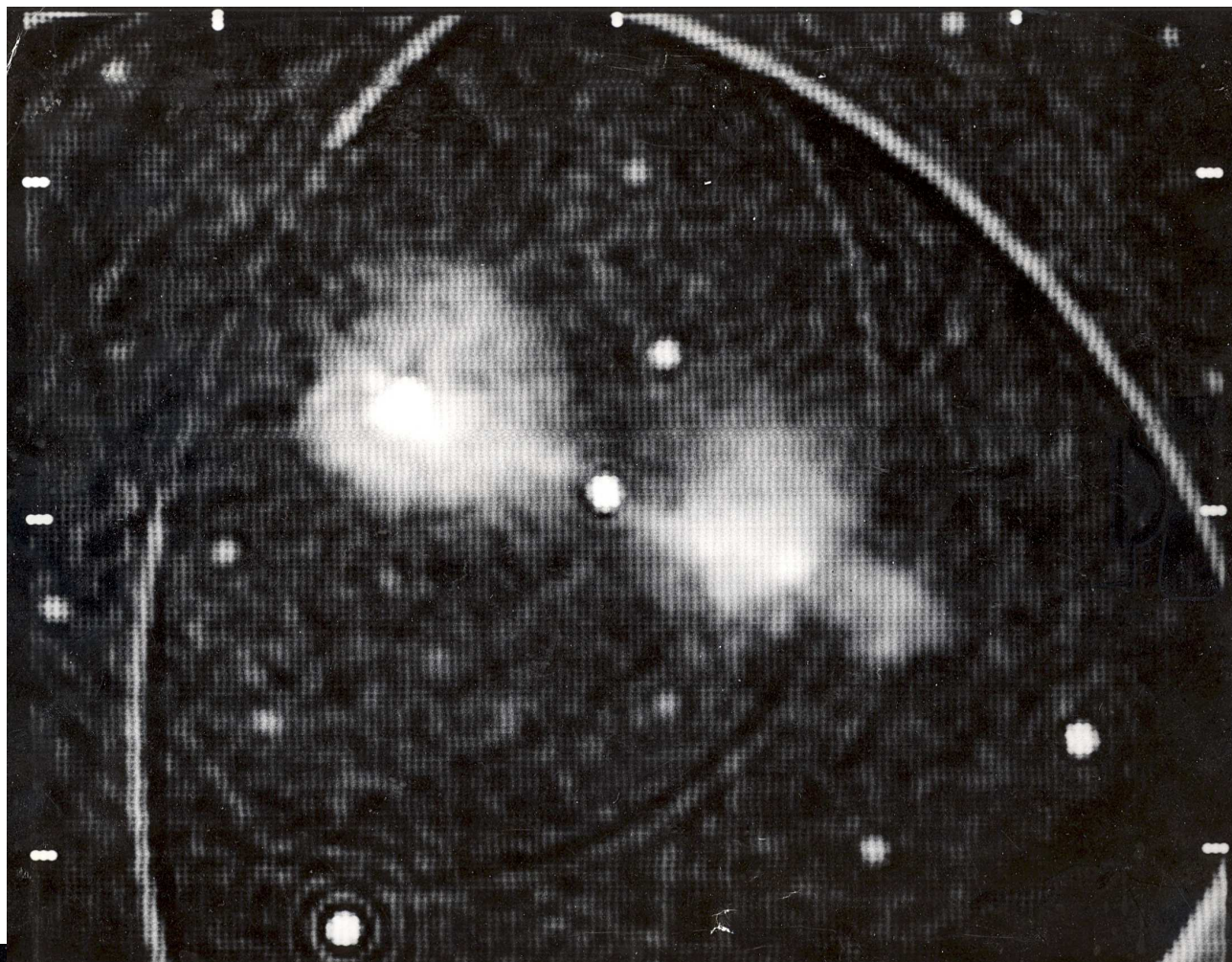


# The Old Leiden Observatory



# The End Result: Success! - DA240 as Observed by the WSRT in 1974

- The original WSRT 1974 610 MHz observation with 1 arcmin synthesized beam showed that this source has an angular extent of about 25 arcmin. Many copies of the DA240 print were made for publicity purposes as NFRA was then looking for money to expand the WSRT to 3 km baseline length.



# So What was the Influence on Canadian Radio Astronomy?

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- The answer lies in what was written on the back of this particular copy of the print

$z \approx 0.0356$   
 $D = 210 \text{ Mpc}$   
Max diameter ca 2100 kpc.  
(Cyg A: 100 kpc).

DA 240 = 4056.16  
WSRT radio freq  
 $\lambda 50 \text{ cm}$   
mbal: 1 mm  $\approx 14 \text{ kpc}$   
 $= 4.5 \times 10^{22} \text{ cm}$

Programma  
WT 77  
Walsh, Wilson & Strom  
mei 1974.  
Copyright Sterrenwacht Leiden

Voor  
Harry Drees,  
met her blijf gaest,  
H. van der L. Hill.

Tony Dilli  
DECEMBER 13, 2007!



# So What was the Influence on Canadian Radio Astronomy?

- Harry Dames was a graduate student in Leiden who sadly contracted cancer some time around 1974 and died a year or two later
- Harry van der Laan, then chairman of the Leiden astronomy department, sent Harry Dames this particular print.
- The back of the print shows the relative scale of the print to the actual size of the object (1 mm equates to 14 kiloparsec)
- Some time after Harry died his parents gave his astronomy-related possessions to a boy who lived nearby and had shown an interest in astronomy.
- The boy was so enthralled by the size of DA240 as evidenced by the scale given on the DA240 radio photo that he decided to become a radio astronomer himself.

# So What was the Influence on Canadian Radio Astronomy?

- And that is the reason Jeroen Stil, Leiden PhD, 1999 and currently a professor of astronomy at the University of Calgary, became a radio astronomer.
- Jeroen's main research area focusses on cosmic magnetism, one of the topics of this workshop.

