VLA SIMULATION

VLA simulation of radio observations with APerture SYNthesis SIMulator (APSYNSIM), program by Ivan Marti-Vidal.

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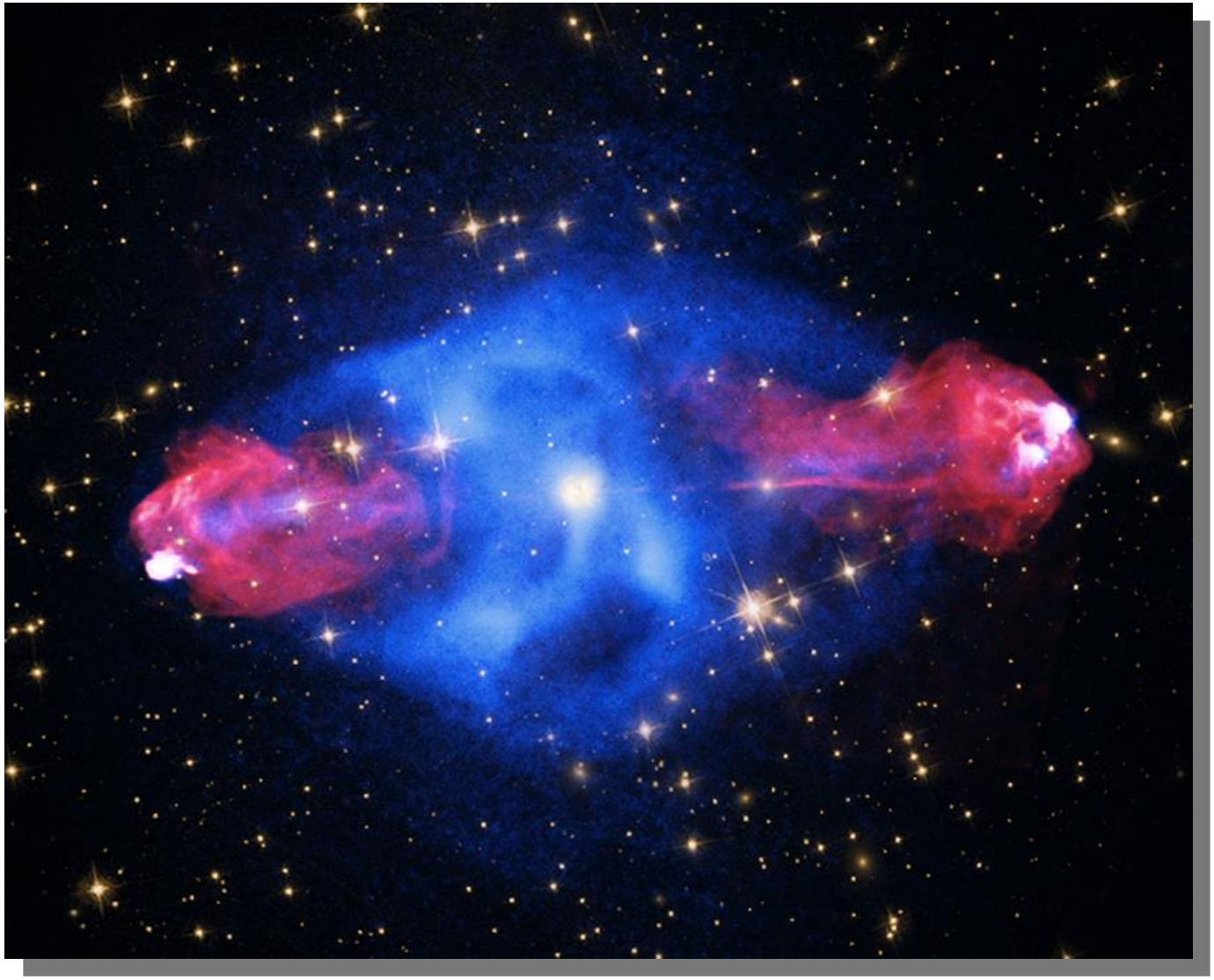
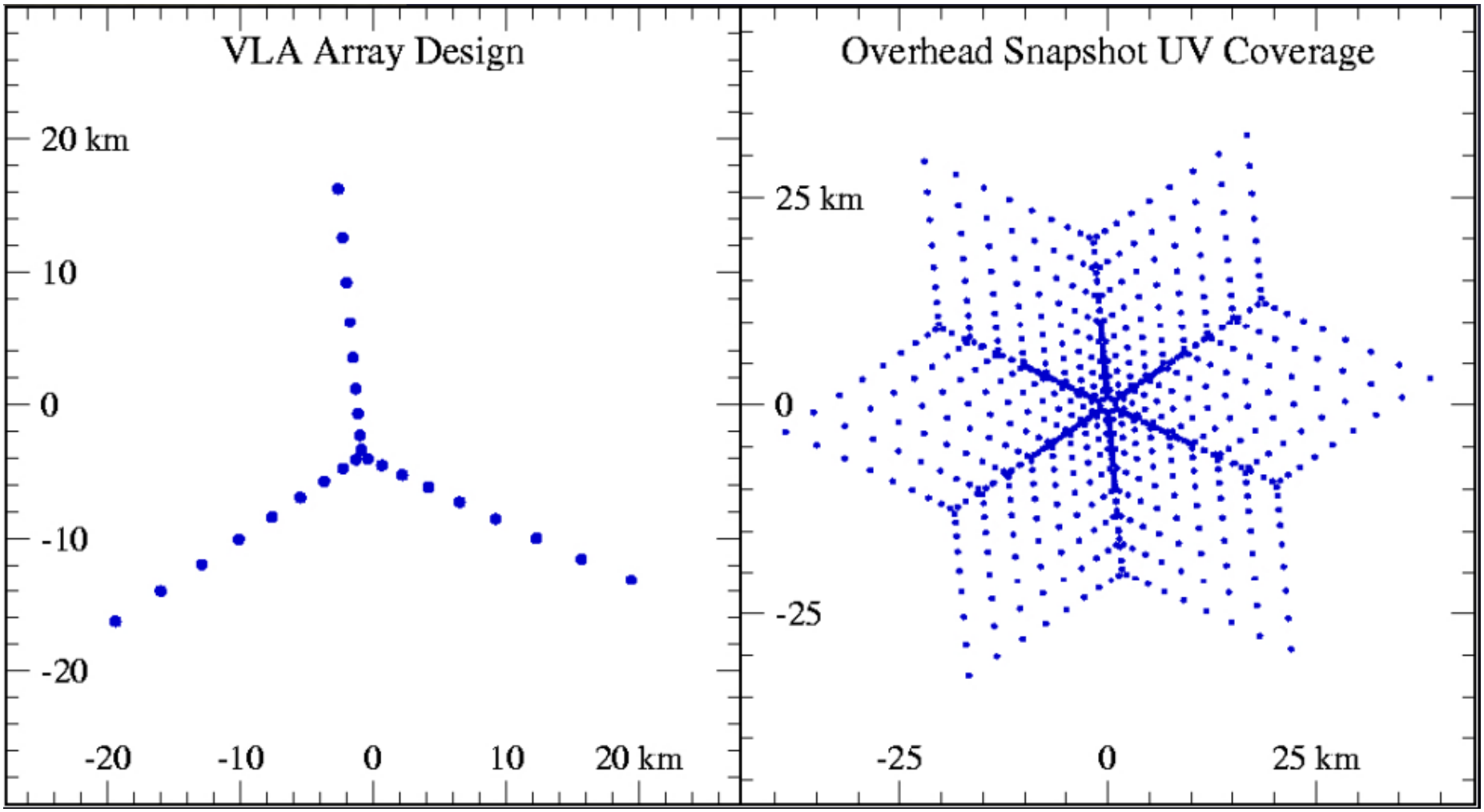
Target



Cygnus A

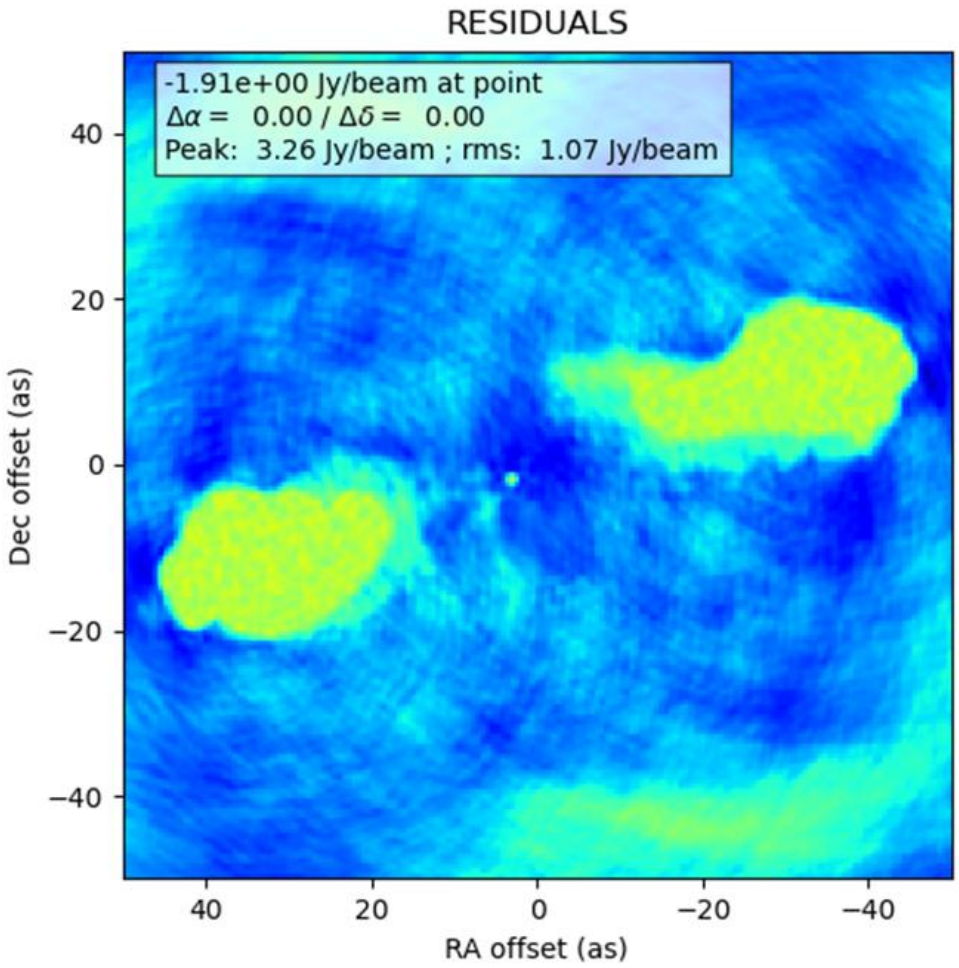
One of the **most powerful radio sources** in the sky distant $232\ Mpc$ with magnitude $V = 16{,}22$. It contains an AGN with $(2{,}5\ \pm 0.7) \times\ 10^{9}\ M_{sun}$. Hot spots are created from collision of ejected material with the surrounding interstellar medium.

VLA configuration

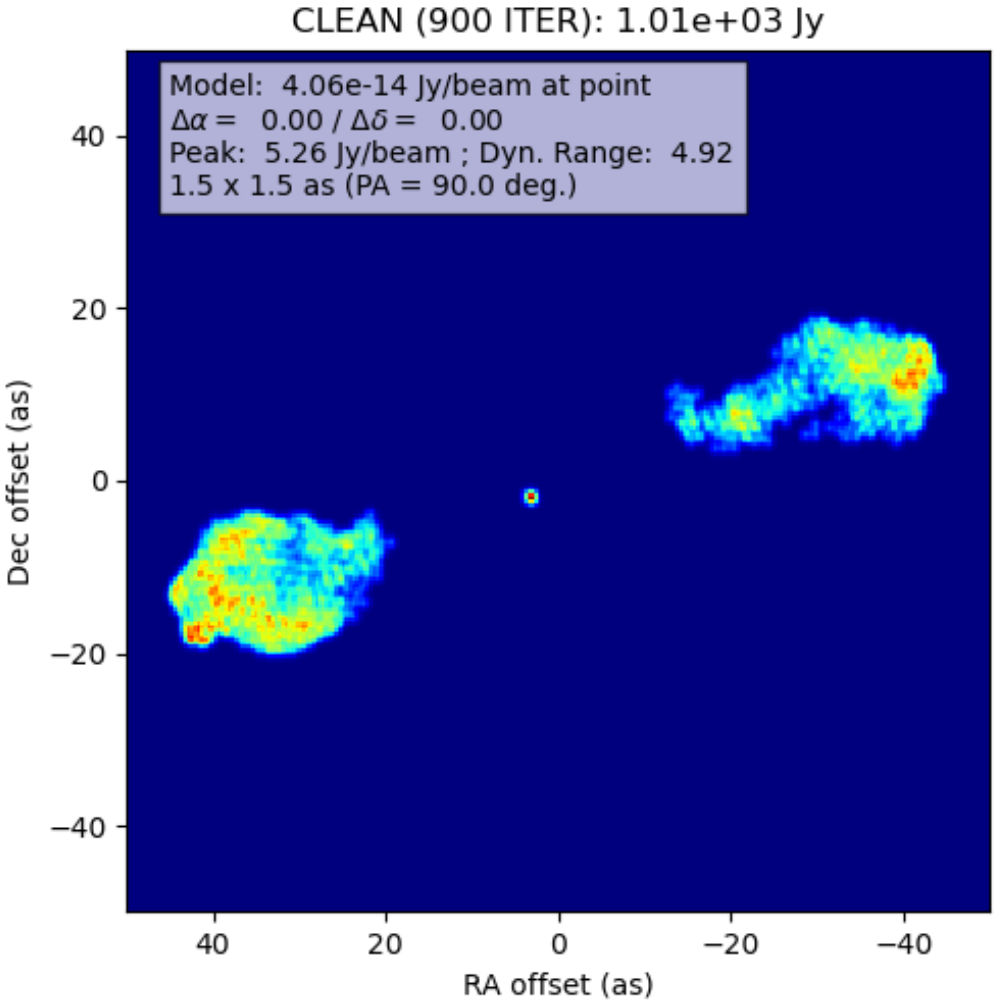


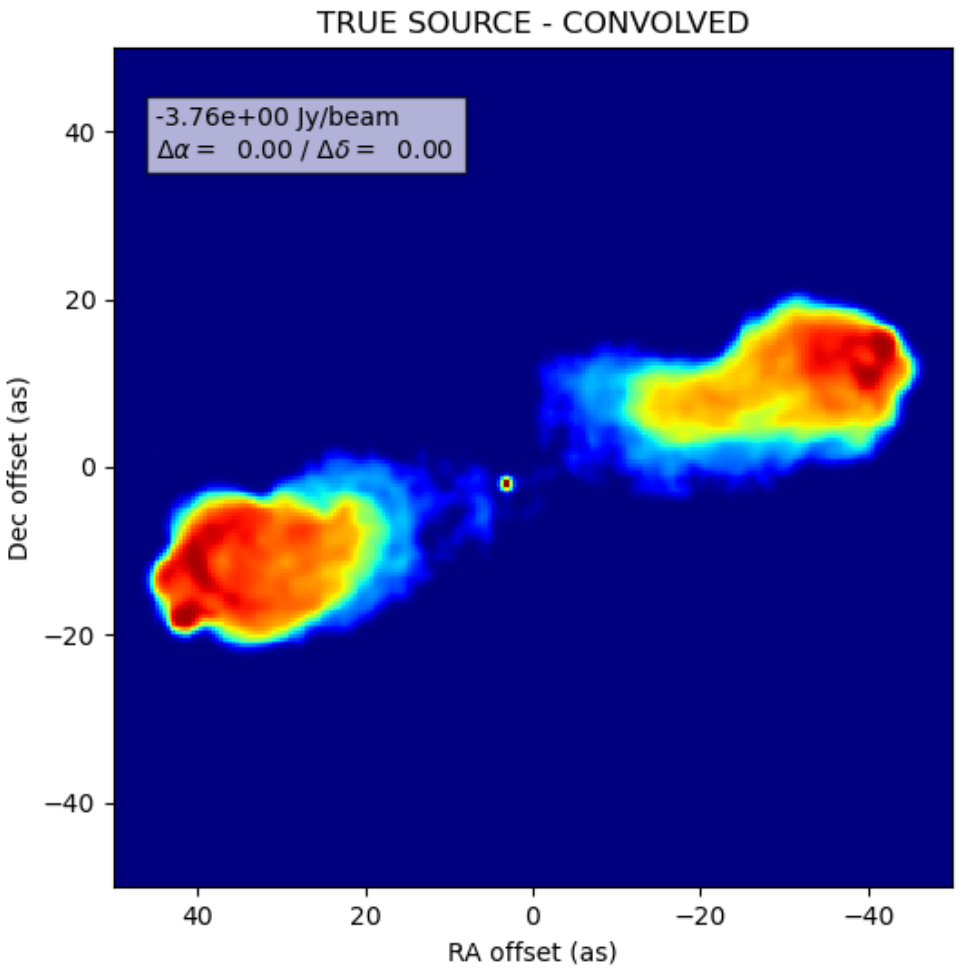
Configuration A

CONFIGURATION A	
$B_{max} = 36\ km\ -\ B_{min} = 0{,}68\ km$	
Latitude	$33{,}9\ h$
Declination	$45{,}0\ h$
$\boldsymbol{H_0}$	$-1{,}27\ h$
$\boldsymbol{H_1}$	$1{,}47\ h$
$\boldsymbol{\lambda}$	$100\ mm$



Configuration A

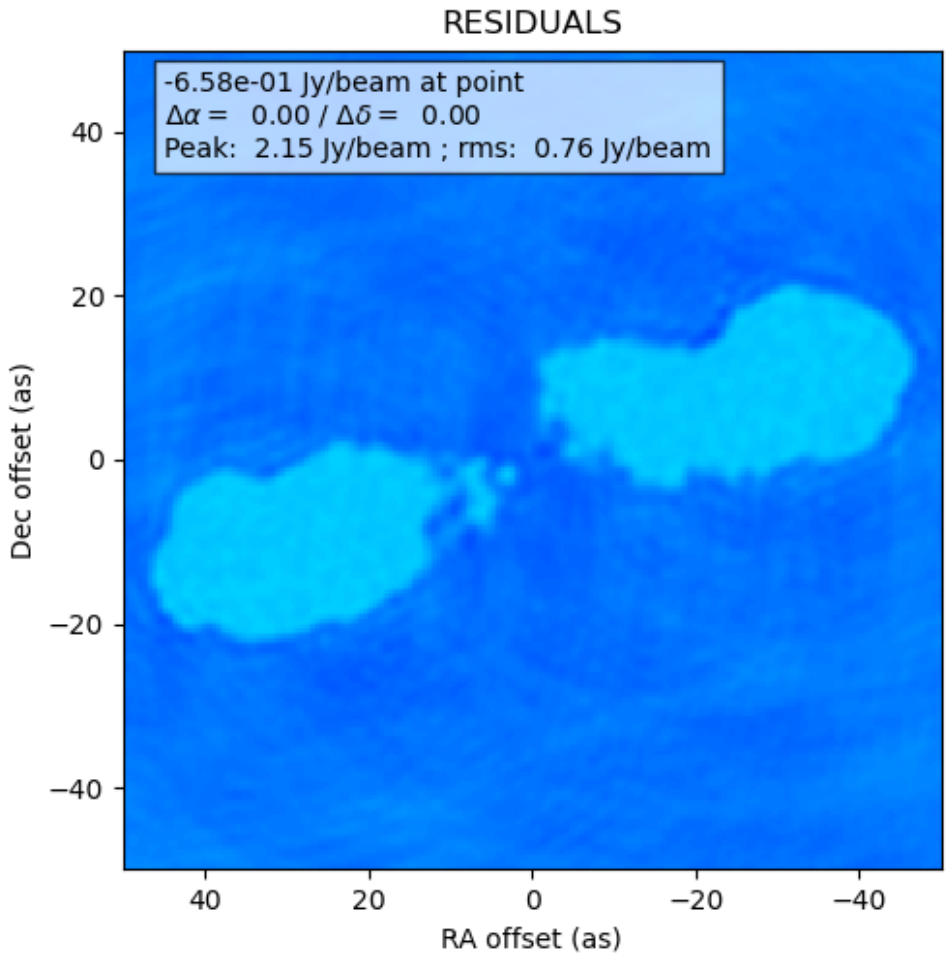




Configuration B

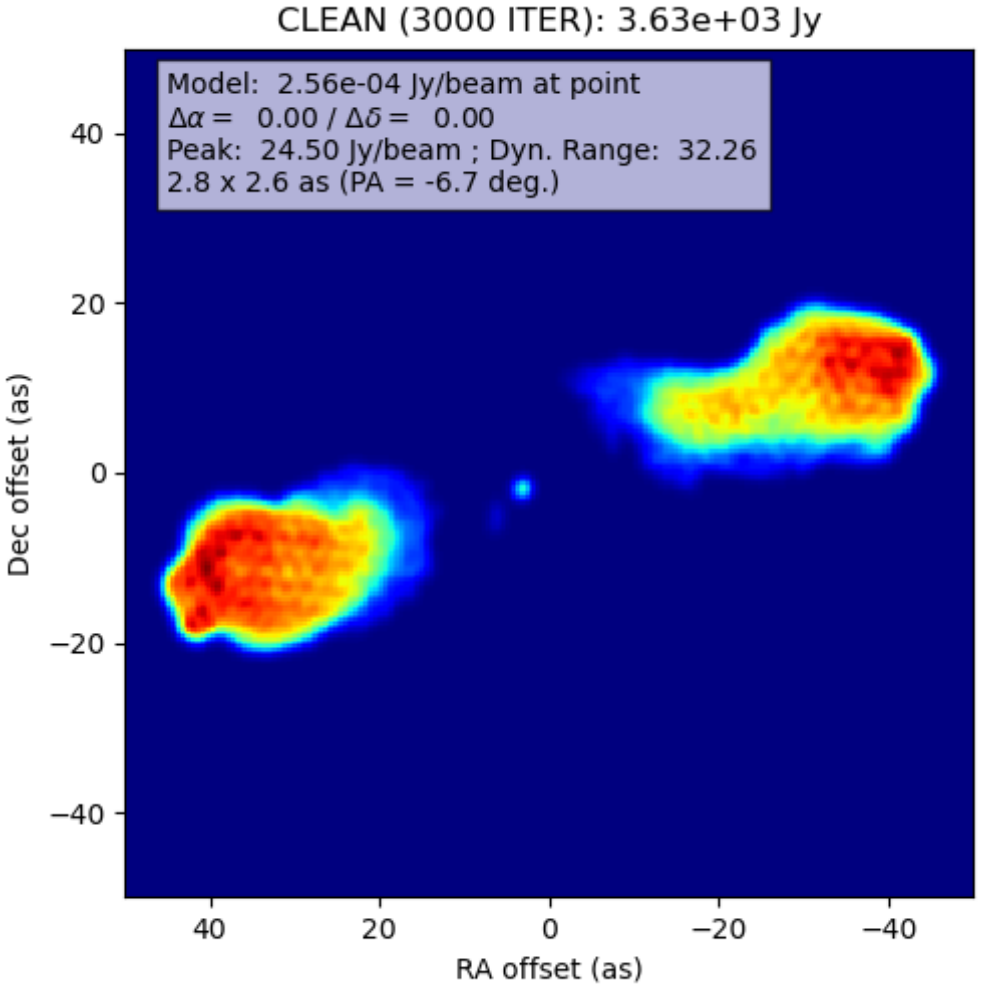
First combination

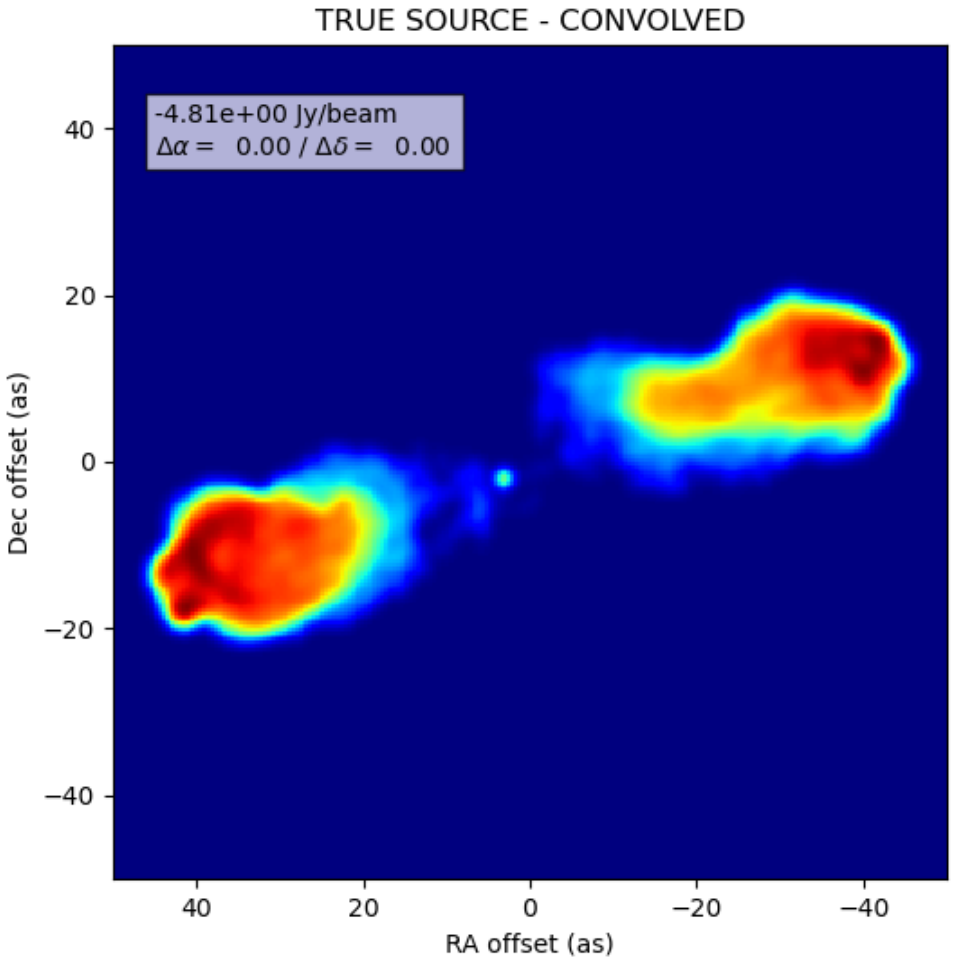
CONFIGURATION B	
$B_{max} = 11\ km\ -\ B_{min} = 0{,}24\ km$	
Latitude	$33{,}9\ h$
Declination	$45{,}0\ h$
$\boldsymbol{H_0}$	$-1{,}44\ h$
$\boldsymbol{H_1}$	$1{,}63\ h$
$\boldsymbol{\lambda}$	$53\ mm$



Configuration B

First combination

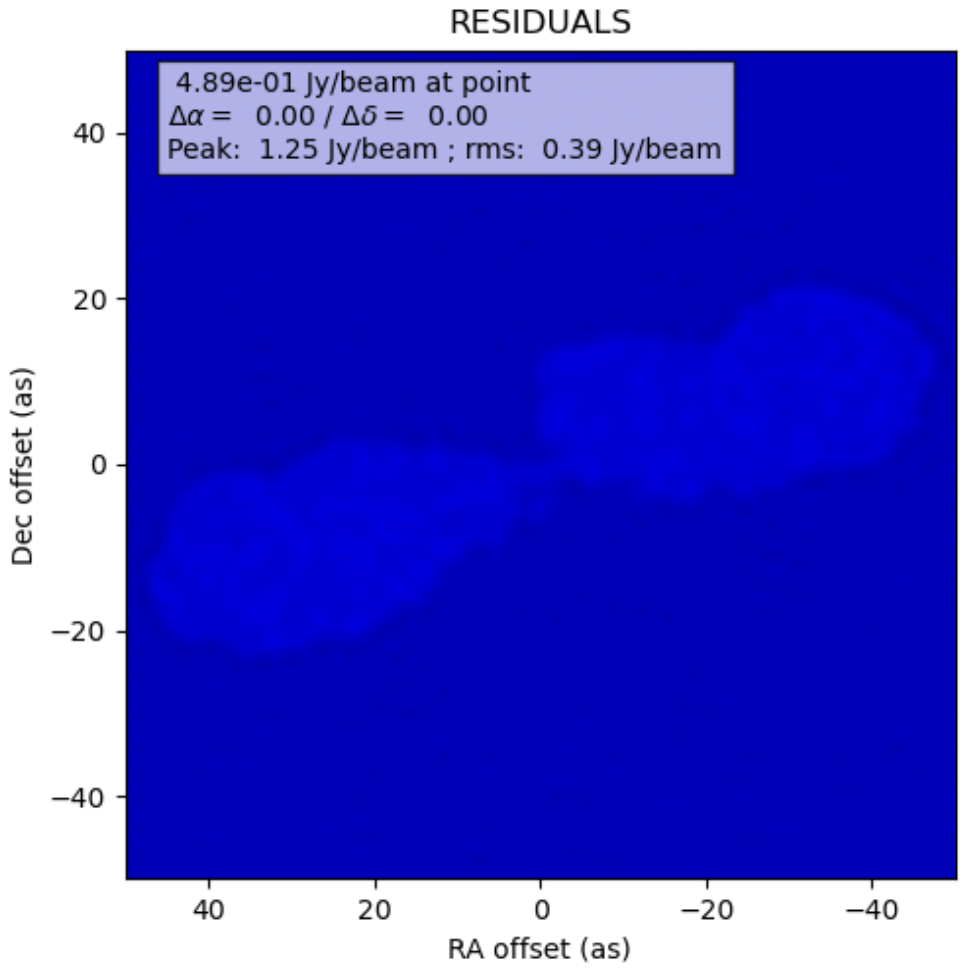




Configuration B

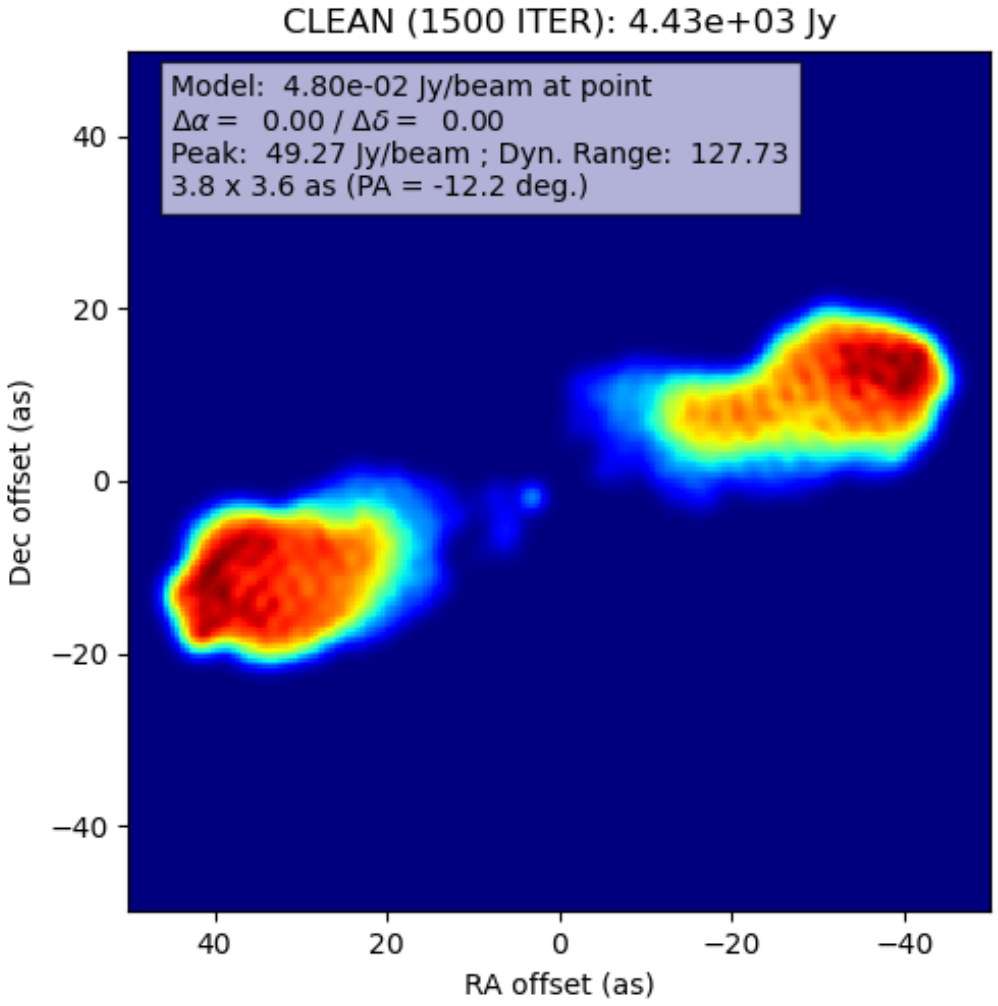
Second combination

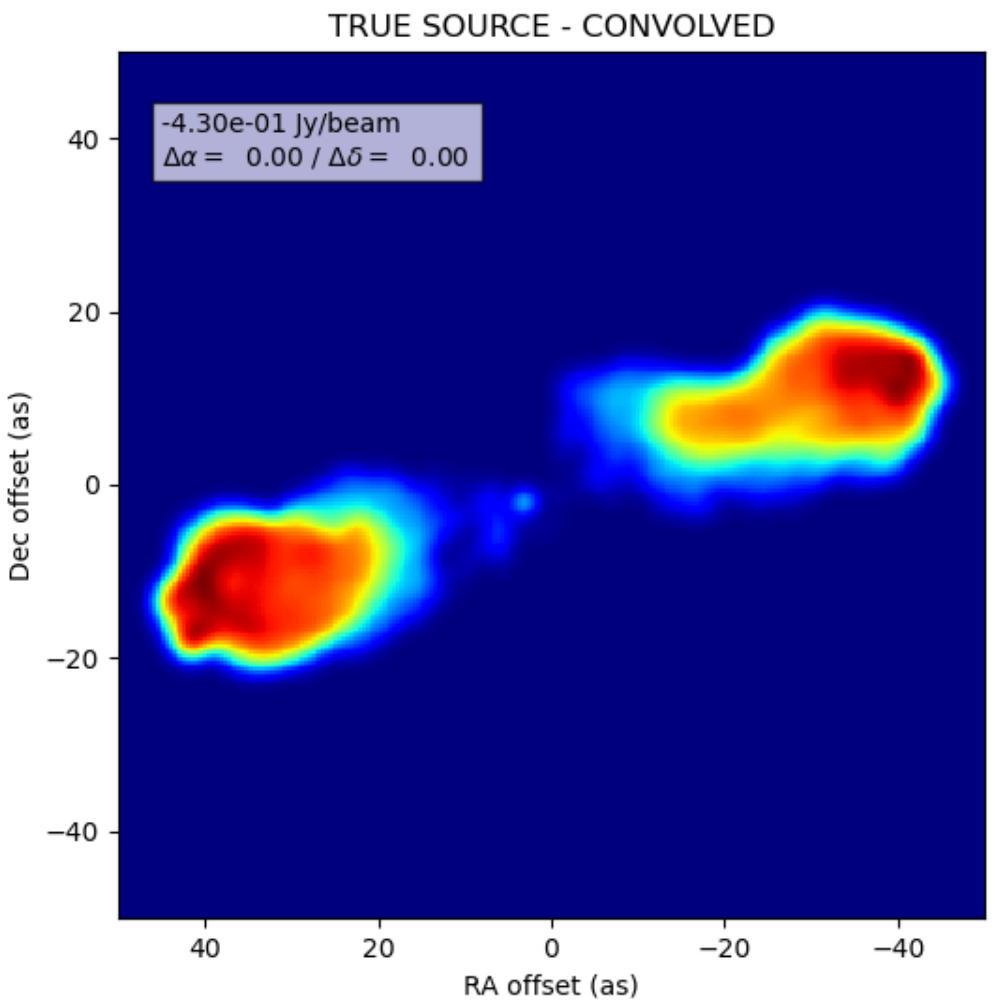
CONFIGURATION B	
$B_{max} = 11\ km\ -\ B_{min} = 0{,}24\ km$	
Latitude	$33{,}9\ h$
Declination	$45{,}0\ h$
$\boldsymbol{H_0}$	$-2{,}4\ h$
$\boldsymbol{H_1}$	$2{,}91\ h$
$\boldsymbol{\lambda}$	$77{,}4\ mm$



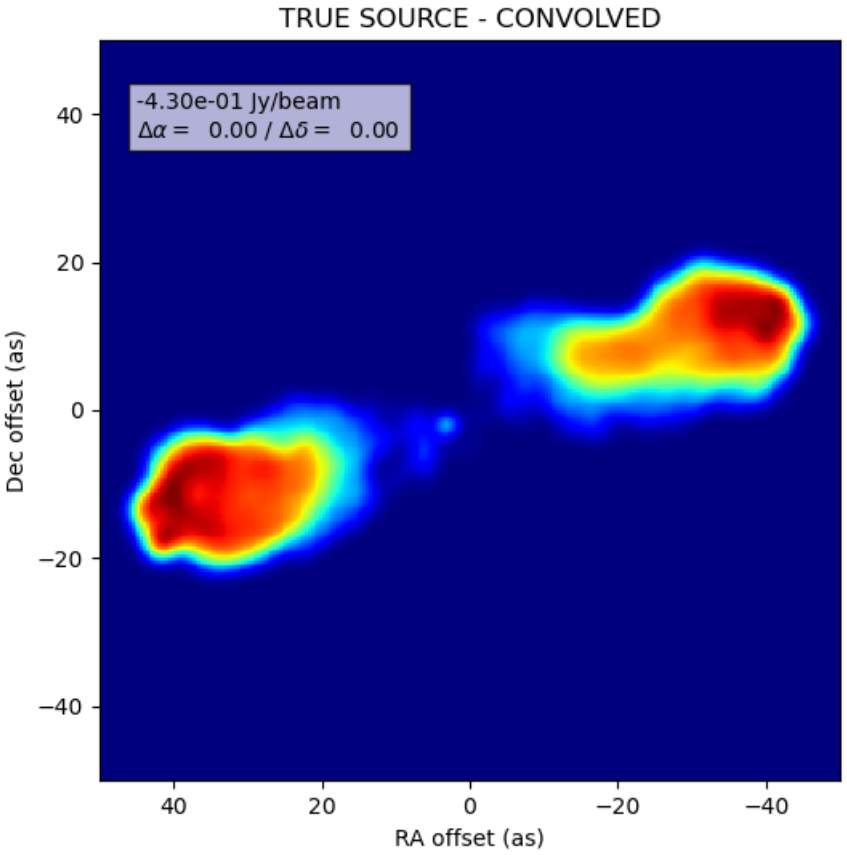
Configuration B

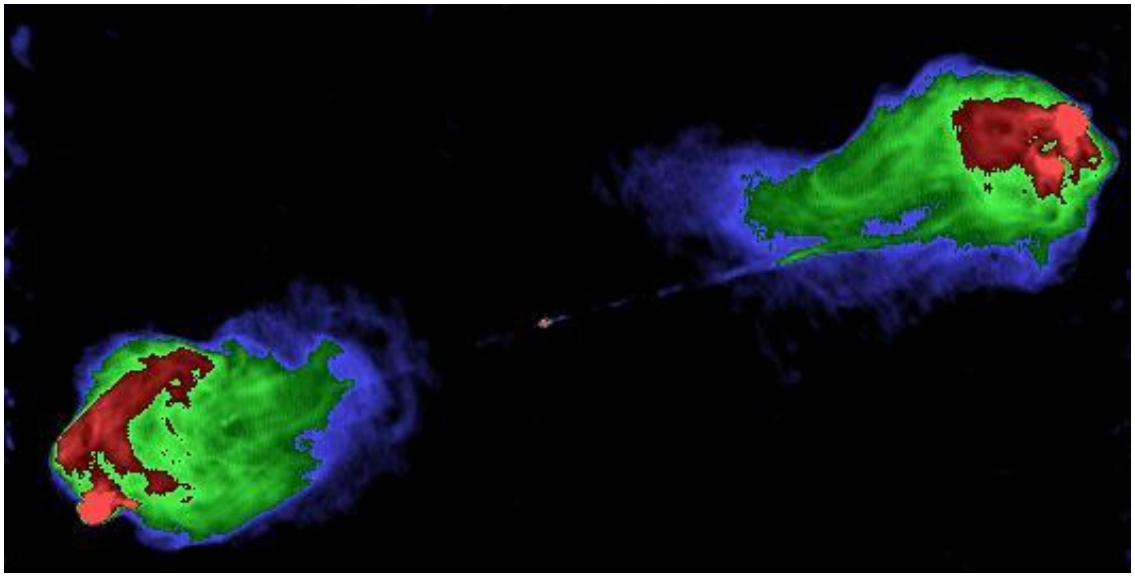
Second combination





Conclusion





CONFIGURATION B
Second combination is the best!


Thanks for your attention!