# Challenges for visualization of *HI* in galaxies

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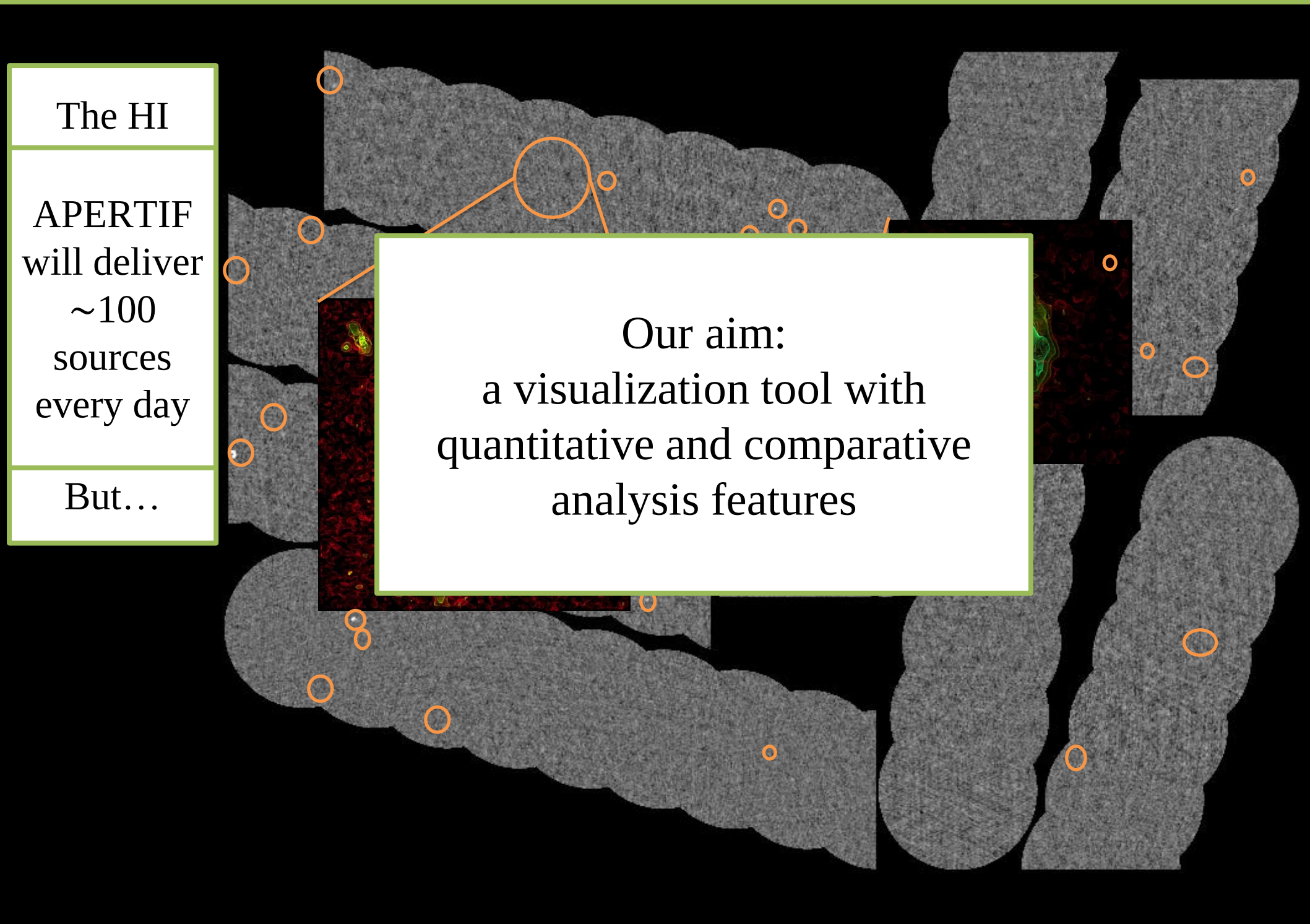
# A HI blind survey of the Ursa Major cluster



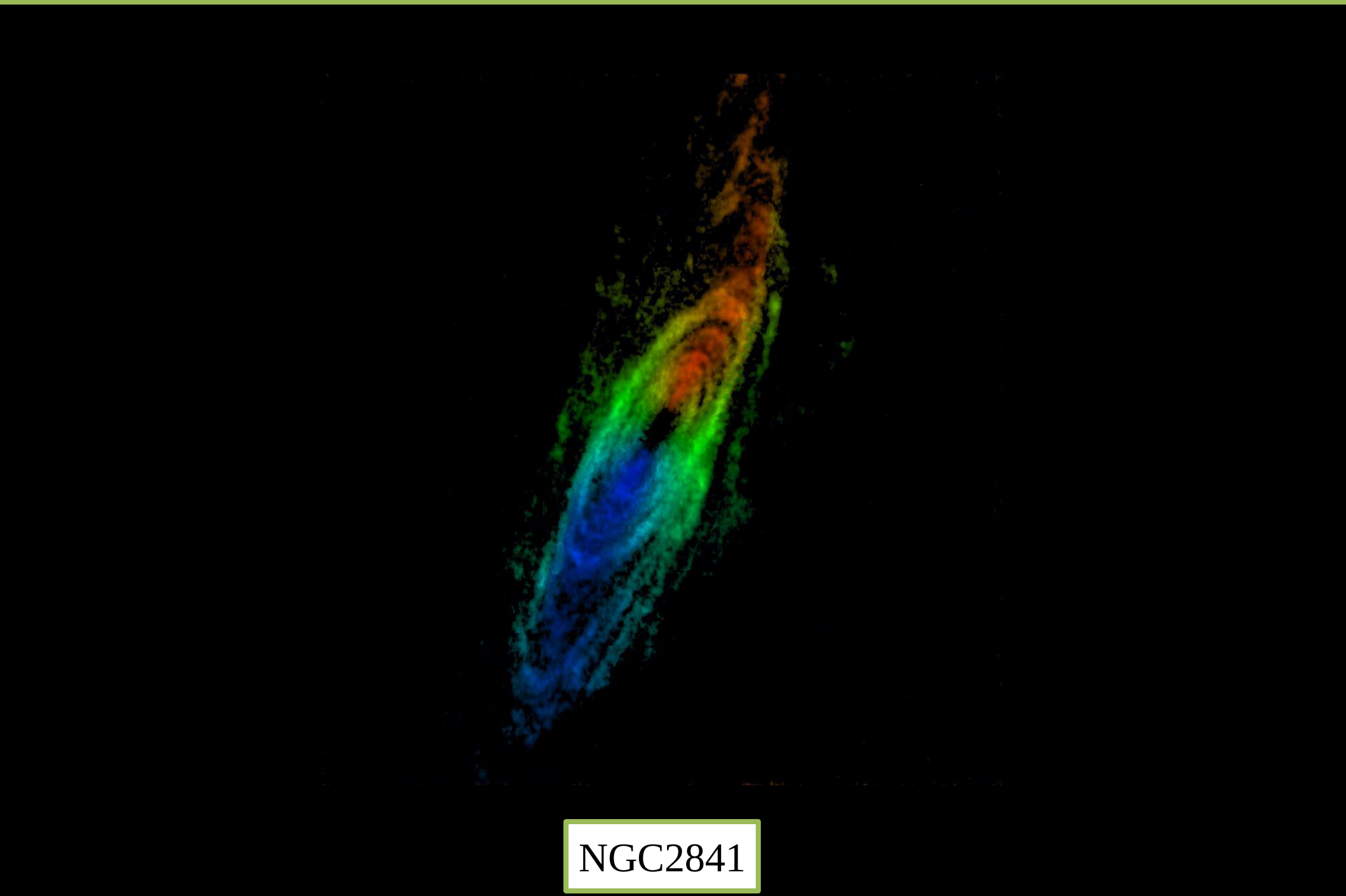
The HI

APERTIF will deliver ~100 sources every day

But…

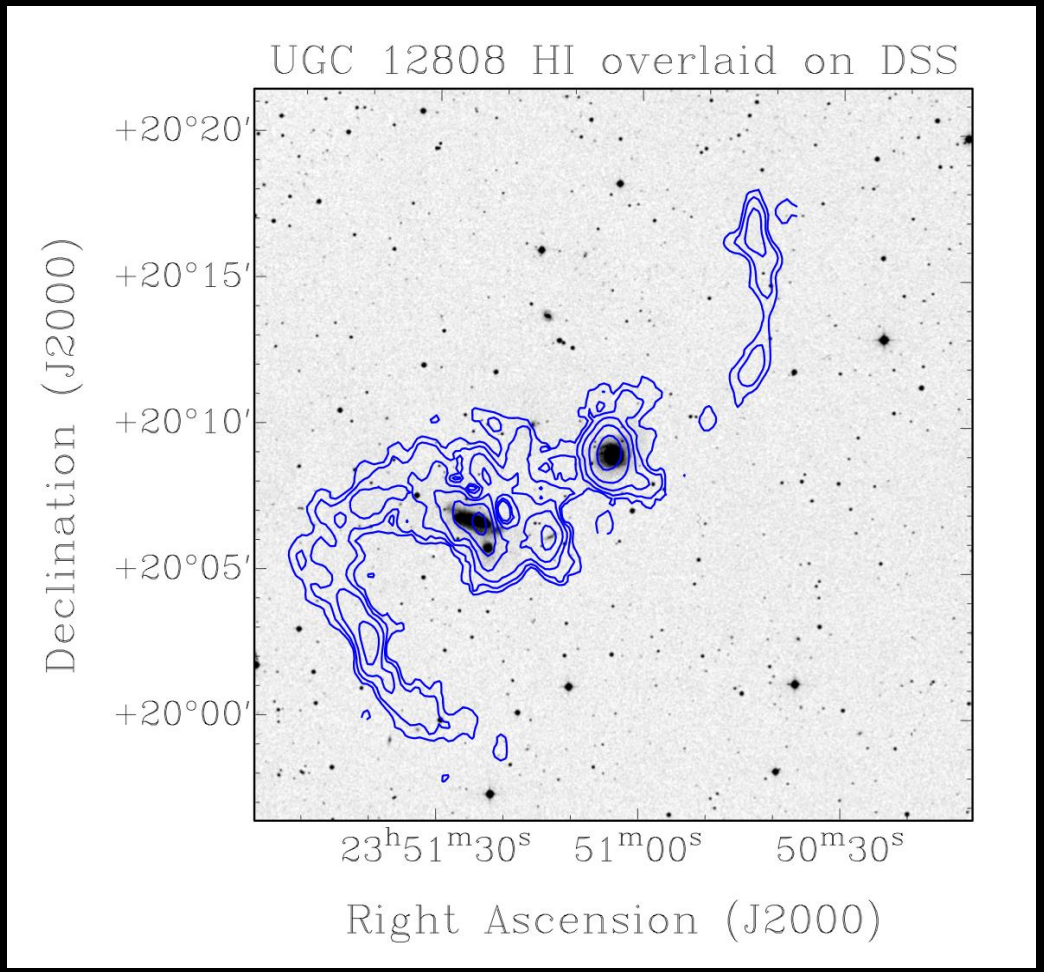
Our aim:
a visualization tool with quantitative and comparative analysis features

# 3-D structure of HI sources



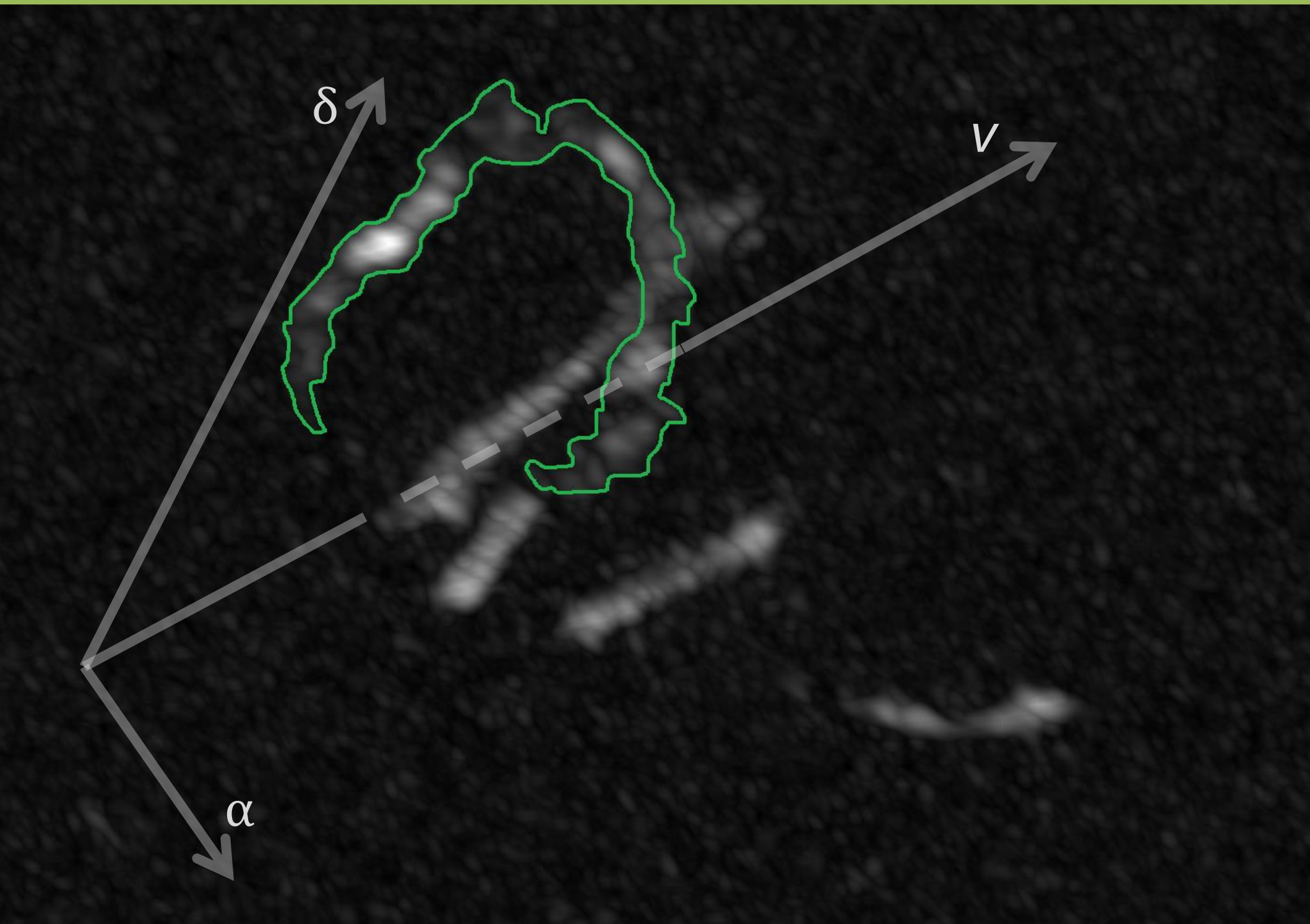
NGC2841

# Challenge 1: Interactive exploration in full 3-D



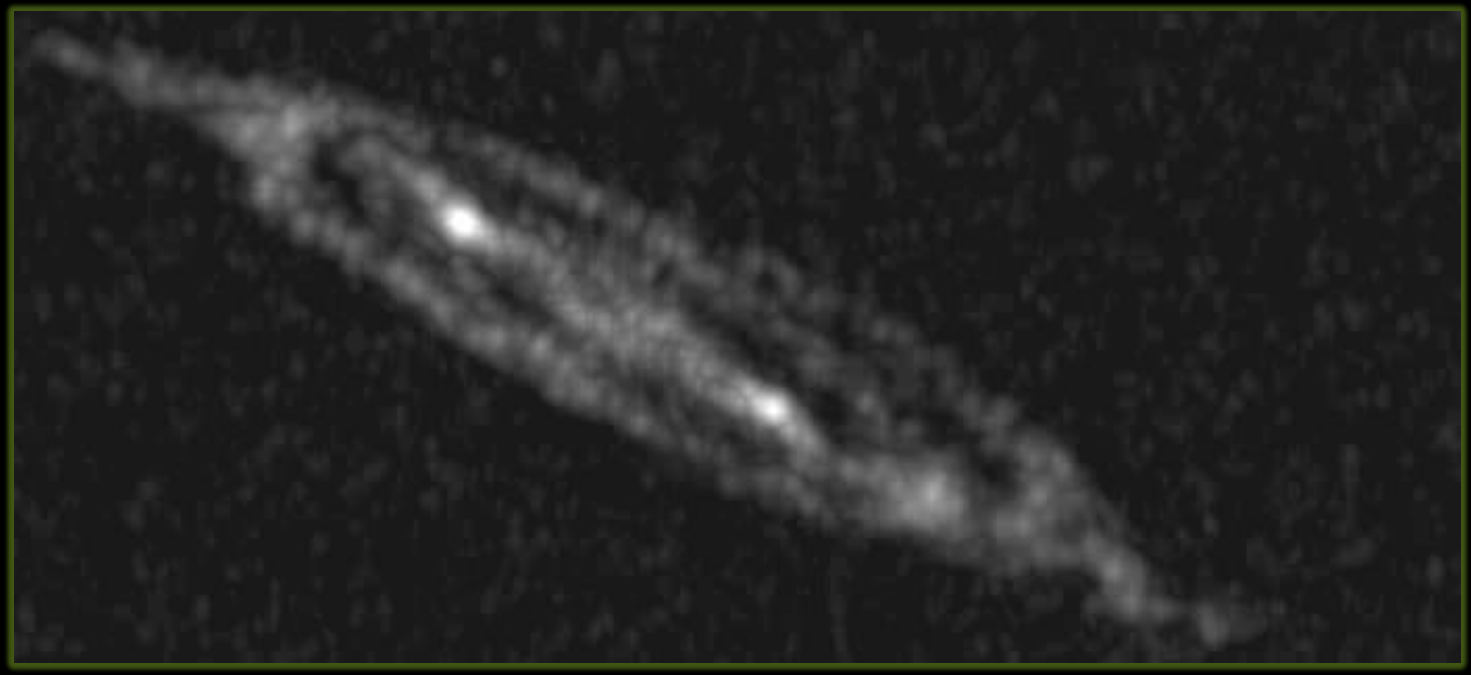

UGC12808

# Challenge 2: Retrieve quantitative information



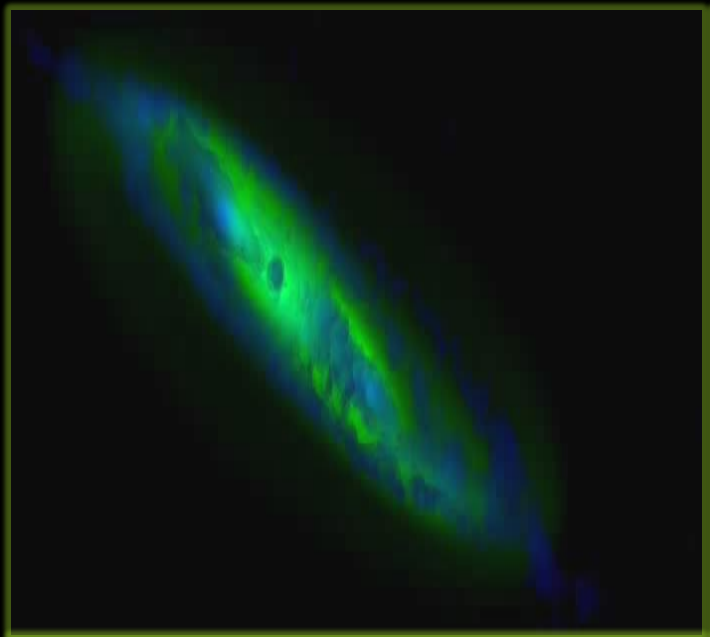
# Challenge 3: Quantitative comparison with model

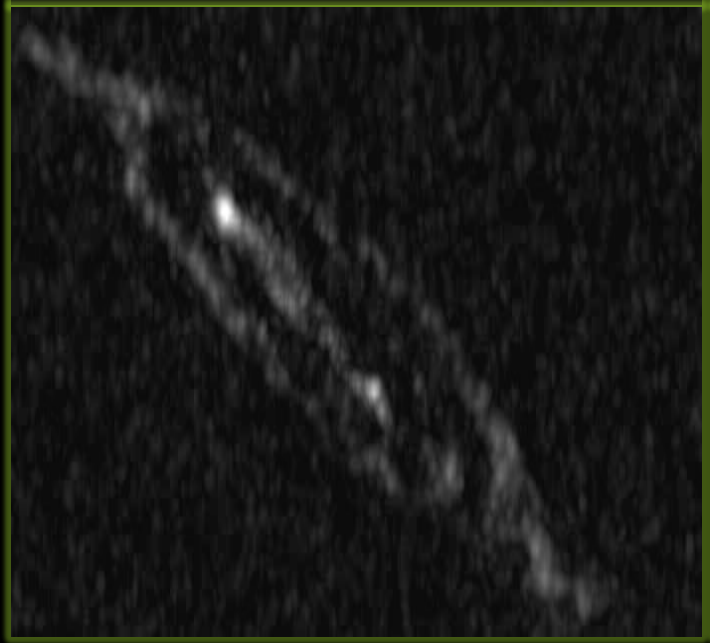
NGC4603



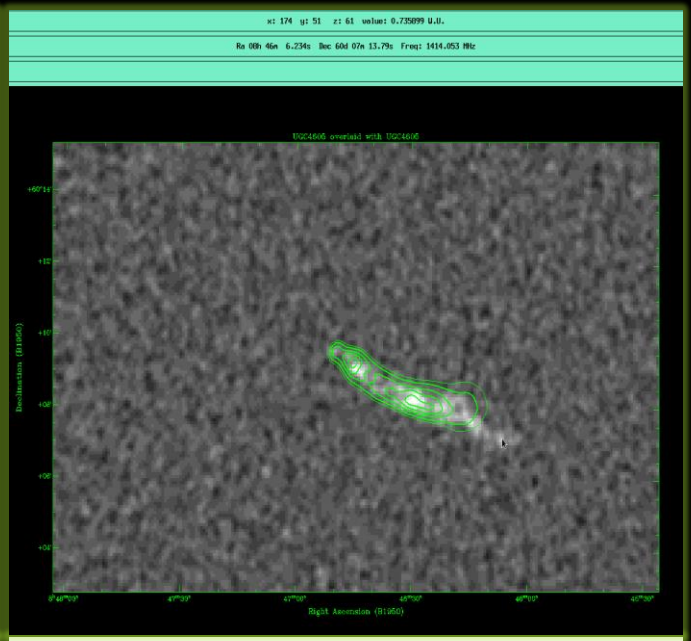
# Our (preliminary) ideas for an HI analysis tool

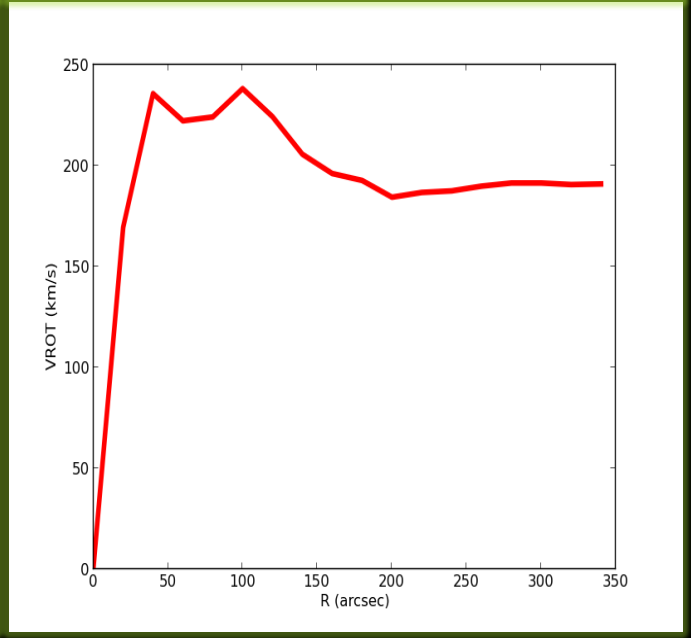
3-D visualization window





2-D plot window






The key factors are:

Interoperability between 3-D and 2-D visualization.

Interactive plotting

Coupling between modeling/fitting codes and visualization.

# 3-D Hardware

## Controller Hardware: Leap motion

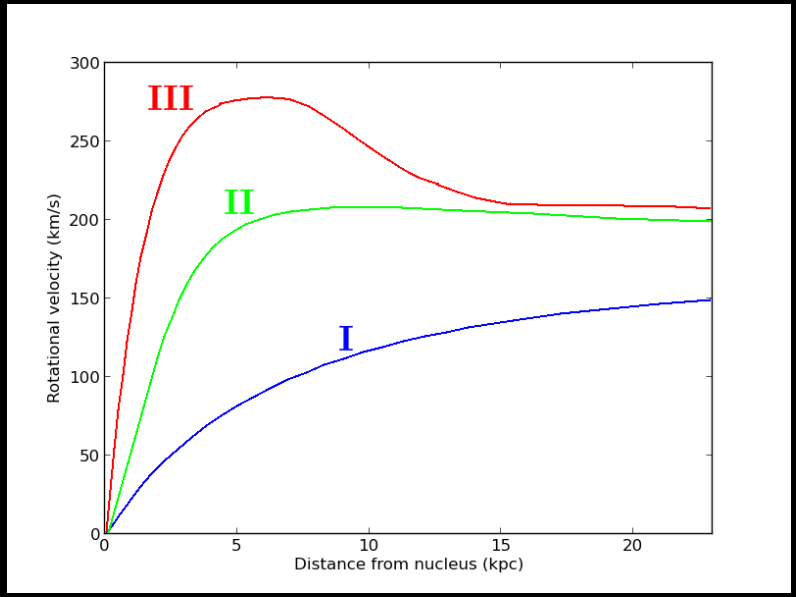
Leap motion control  uses a sensor which can fully track and interpret gestures of a pair of hands in a 3-D environment.

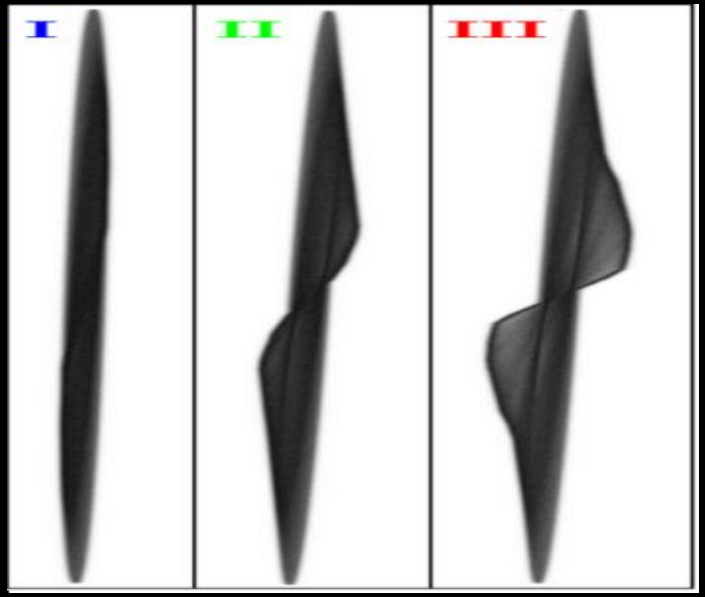
## Screen Hardware: Oculus Rift

Oculus Rift is immersive stereoscopic vision for gaming (currently available as a development kit)


***Thank  you for your attention***

# Kinematics in 3D space




# Wavelet Lifting: Haar wavelet