2012.10.5 KNAG MEETING

Distribution Analysis of Density, Temperature, and Velocity Field around the Clusters.

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BACKGROUND

M31 - Andromeda galaxy

Virgo cluster of galaxies

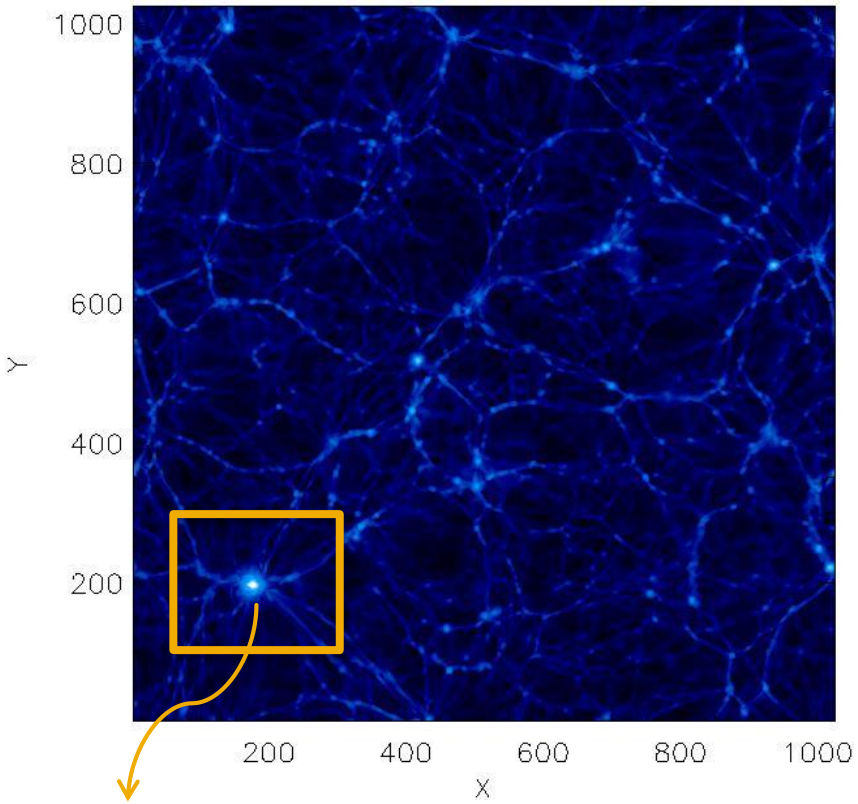
COSMOLOGICAL PARAMETER

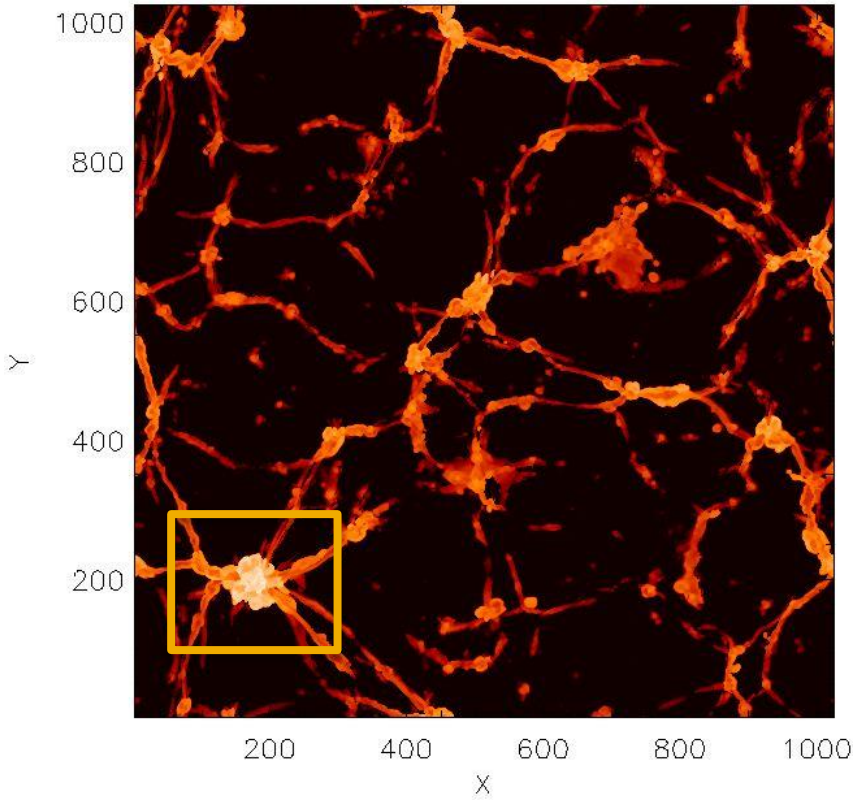
PARAMETER	VALUE
$\Omega_m = \Omega_{DM} + \Omega_b$	0.28
Ω_{DM}	0.234
Ω_b(baryon)	0.046
Ω_Λ	0.72
H_0	100h [km/s/Mpc] (h=0.7)
RCUBE	100.0 [Mpc]

STRUCTURE

Z = 142 cross section

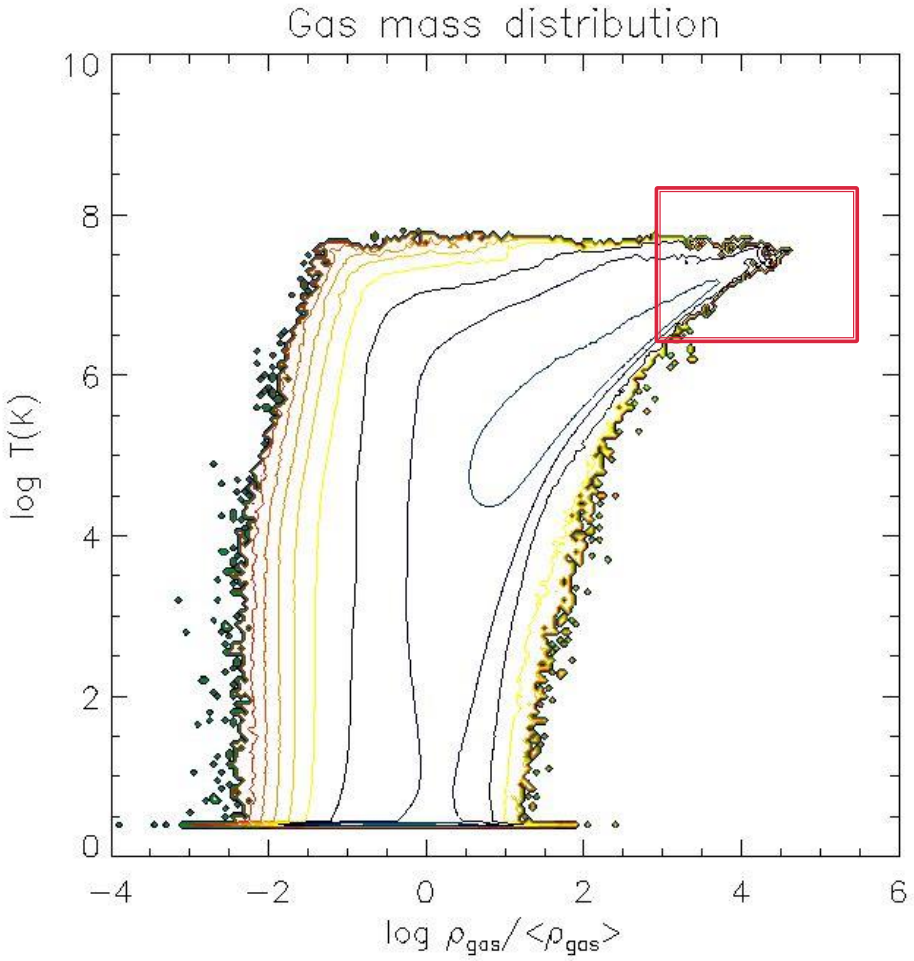
1024 : 100Mpc



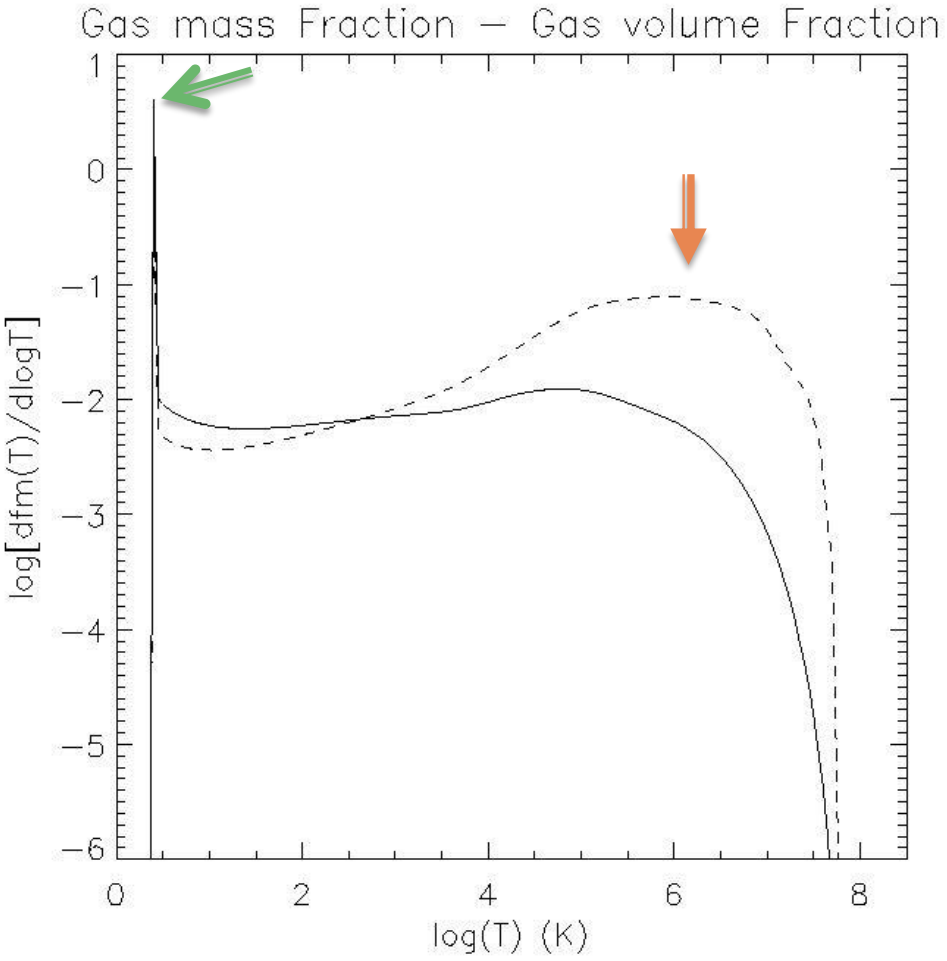


(x, y, z) = (177, 197, 142)

GAS MASS DISTRIBUTION



GAS MASS/VOLUME FRACTION



----- : gas mass fraction

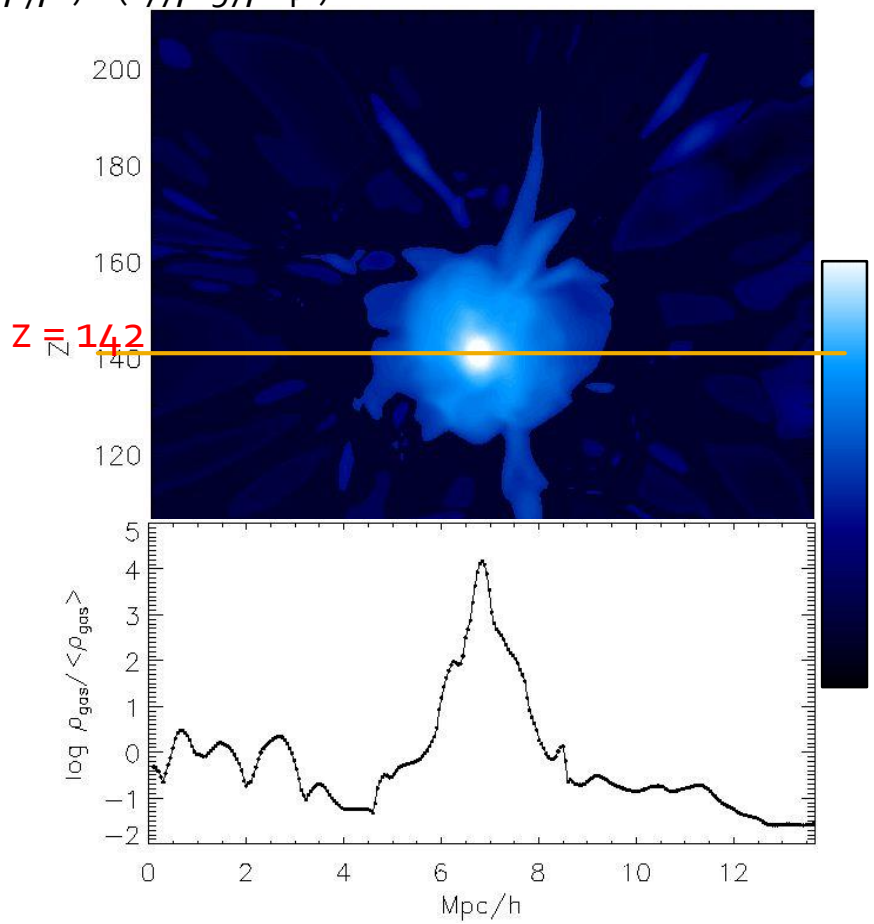
—— : gas volume fraction

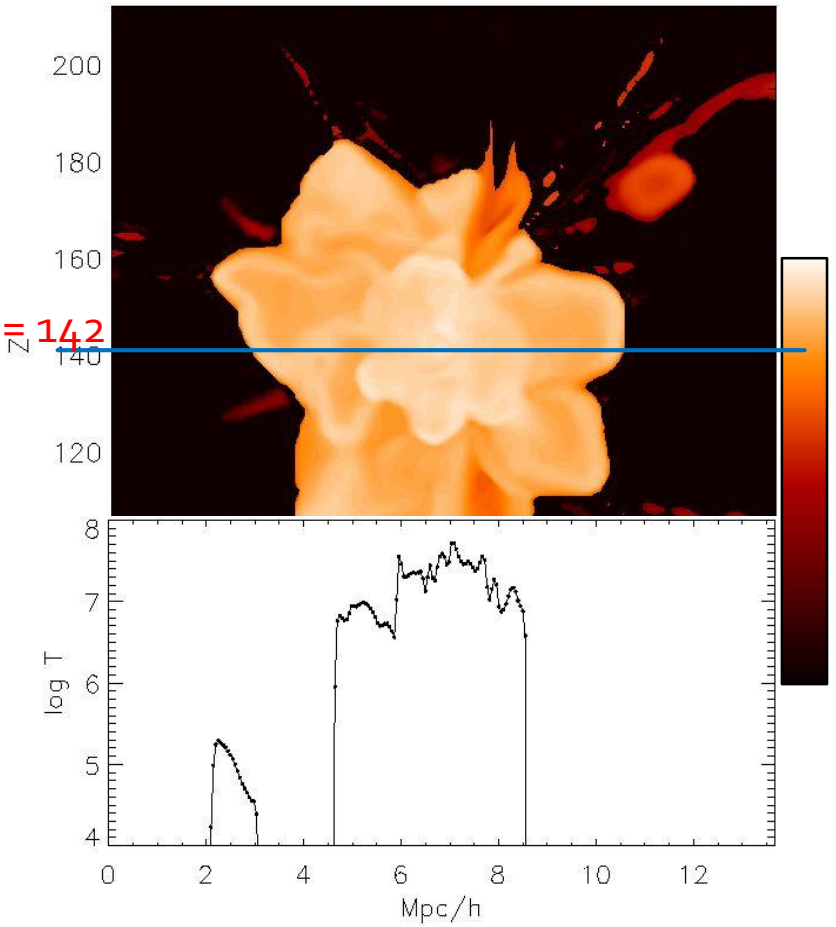
DENSITY/TEMPERATURE CONTOUR

center
(x, y, z) = (177, 197, 142)

X = 177 cross section

1024 : 100Mpc = 140 : 13.67Mpc

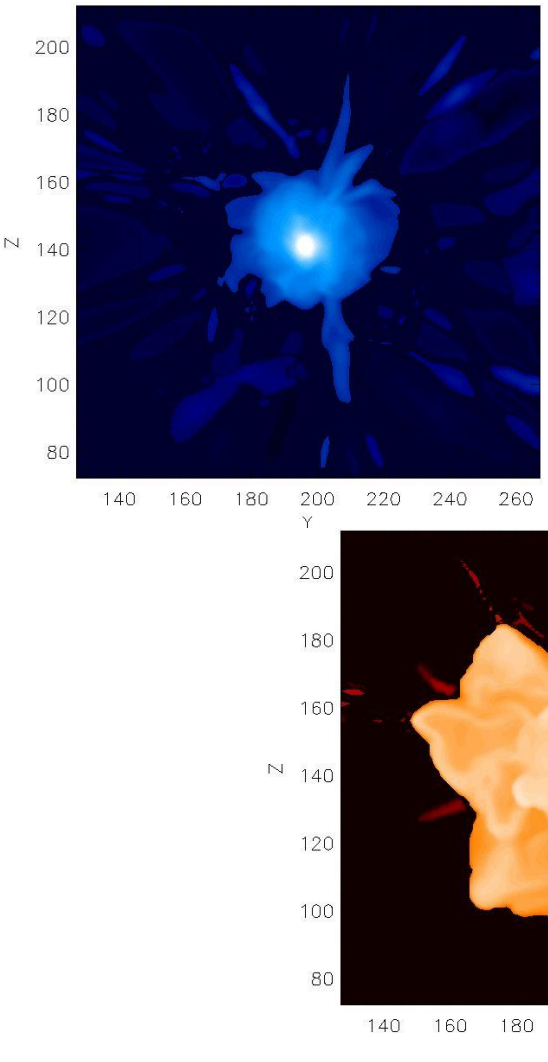


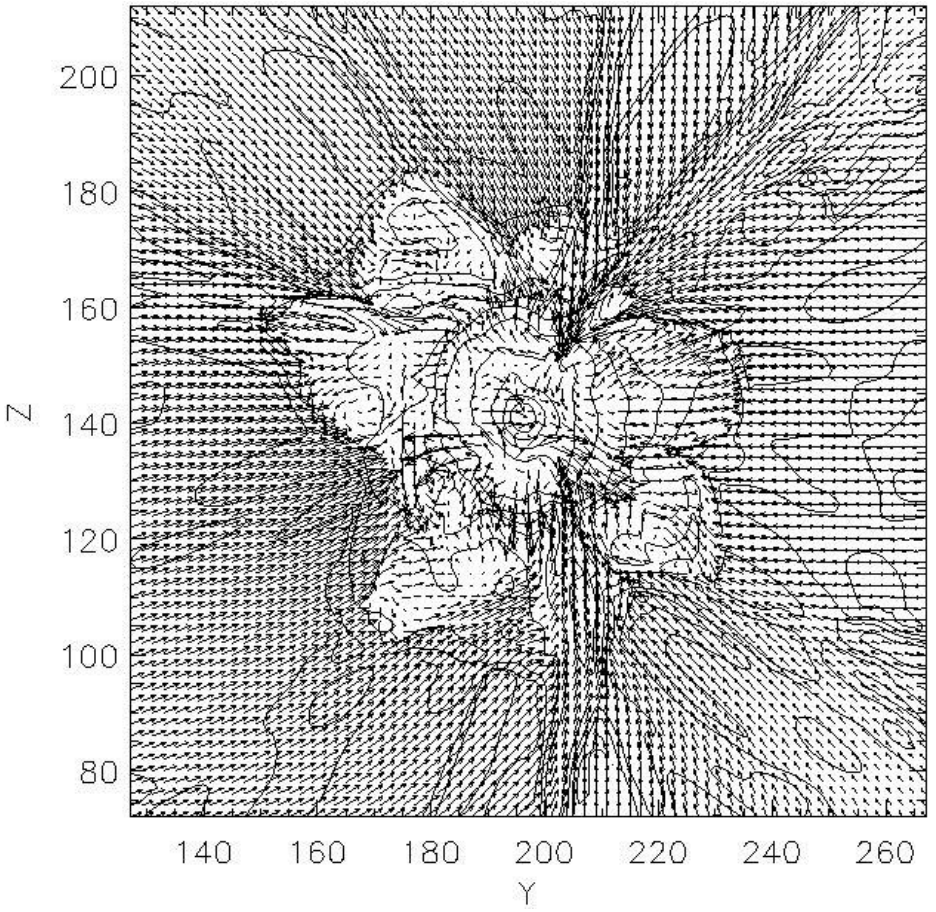


VELOCITY FIELD

X = 177 cross section

140 : 13.67Mpc

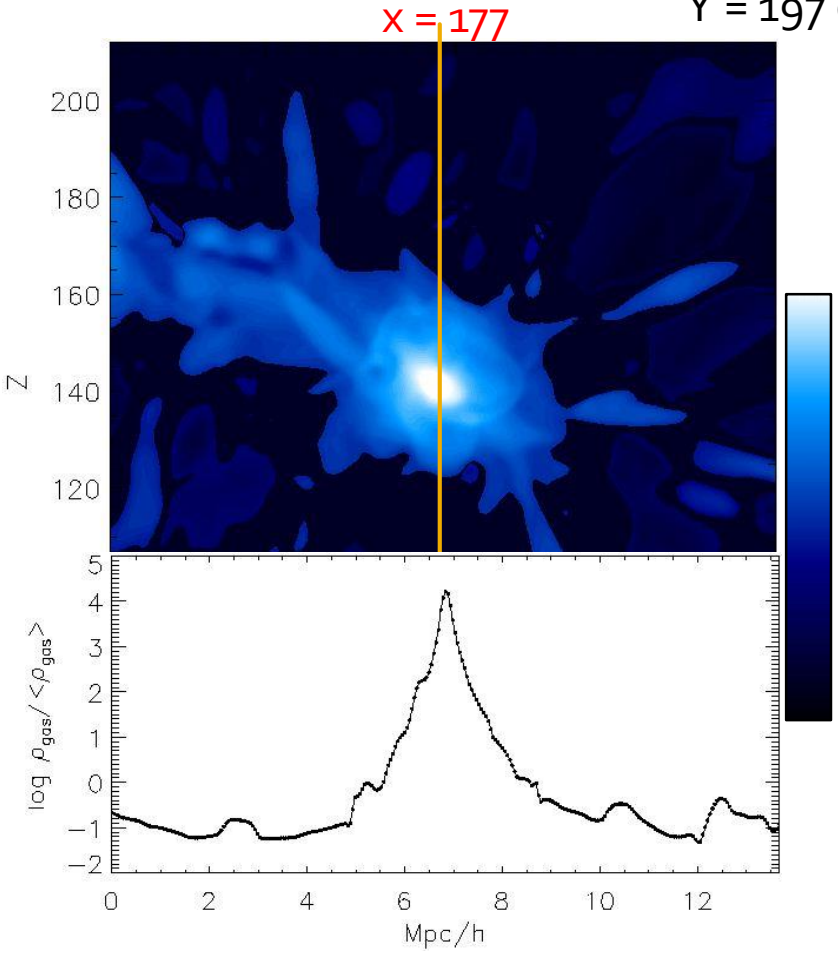


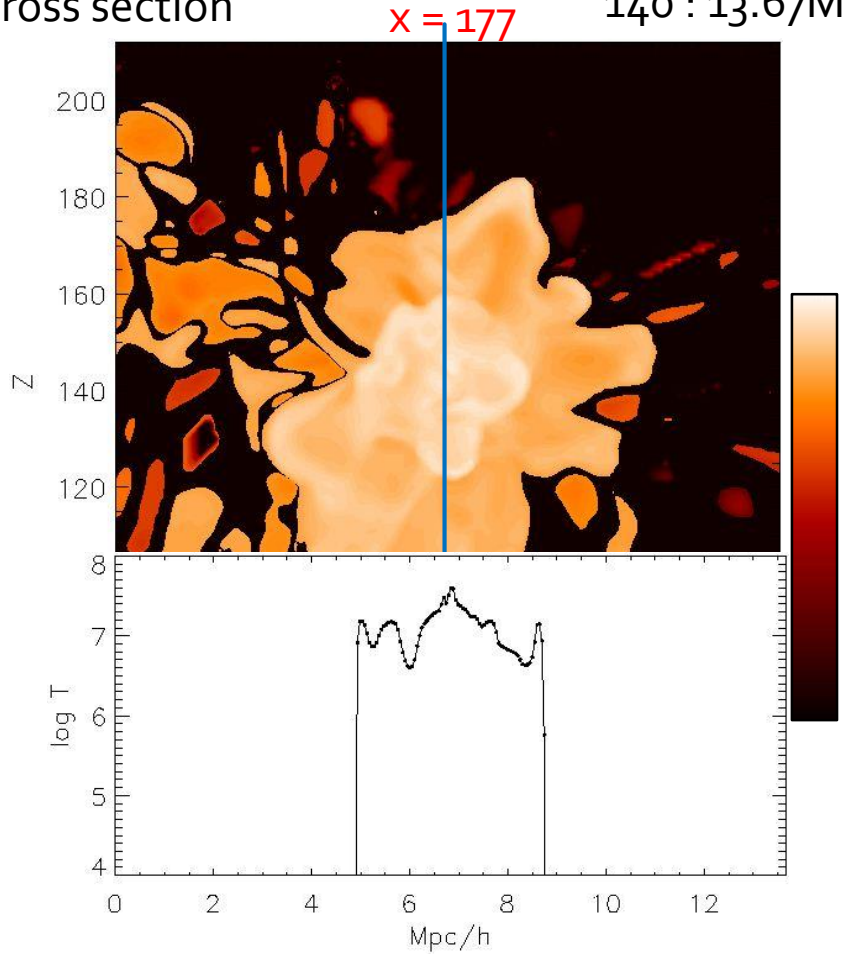


DENSITY/TEMPERATURE CONTOUR

Y = 197 cross section

140 : 13.67Mpc

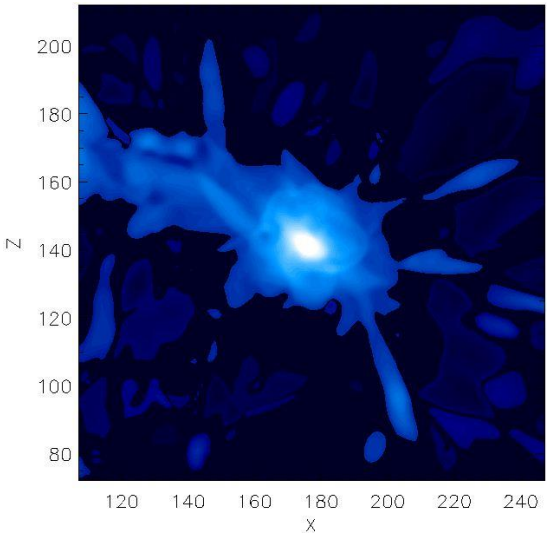


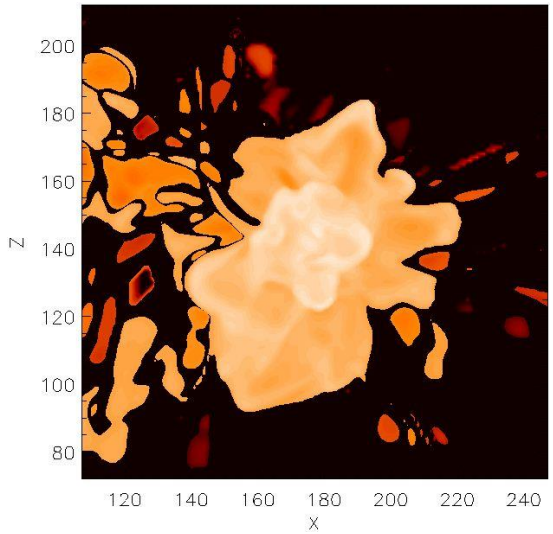


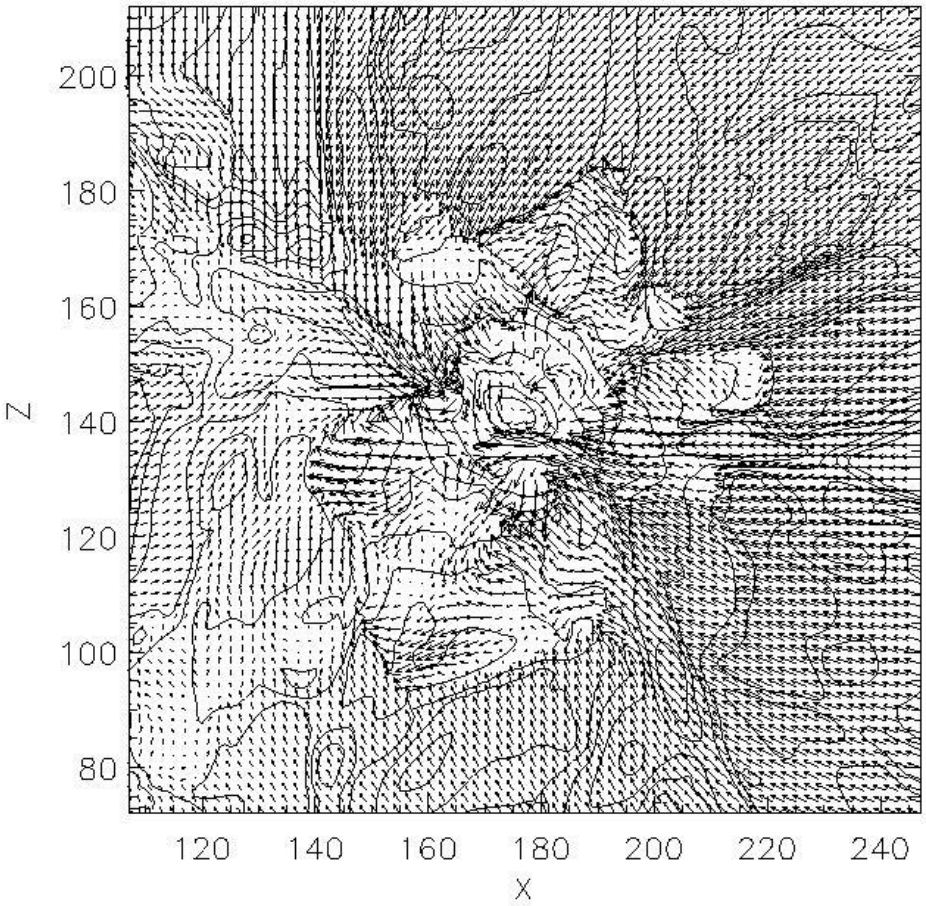
VELOCITY FIELD

Y = 197 cross section

140 : 13.67Mpc



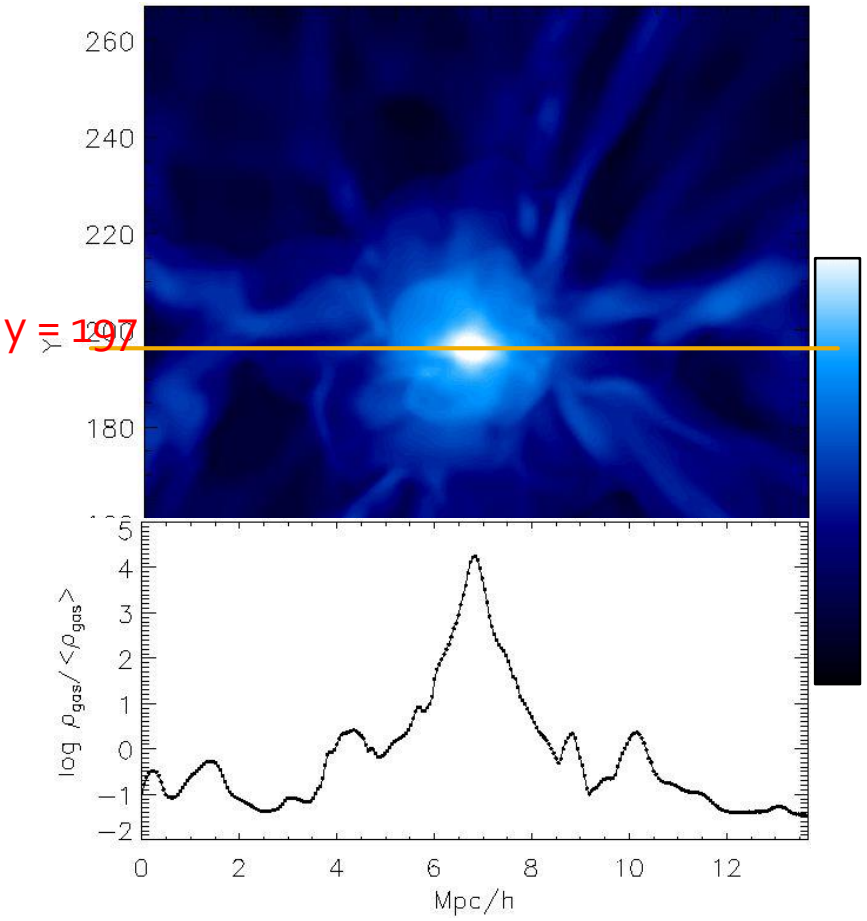


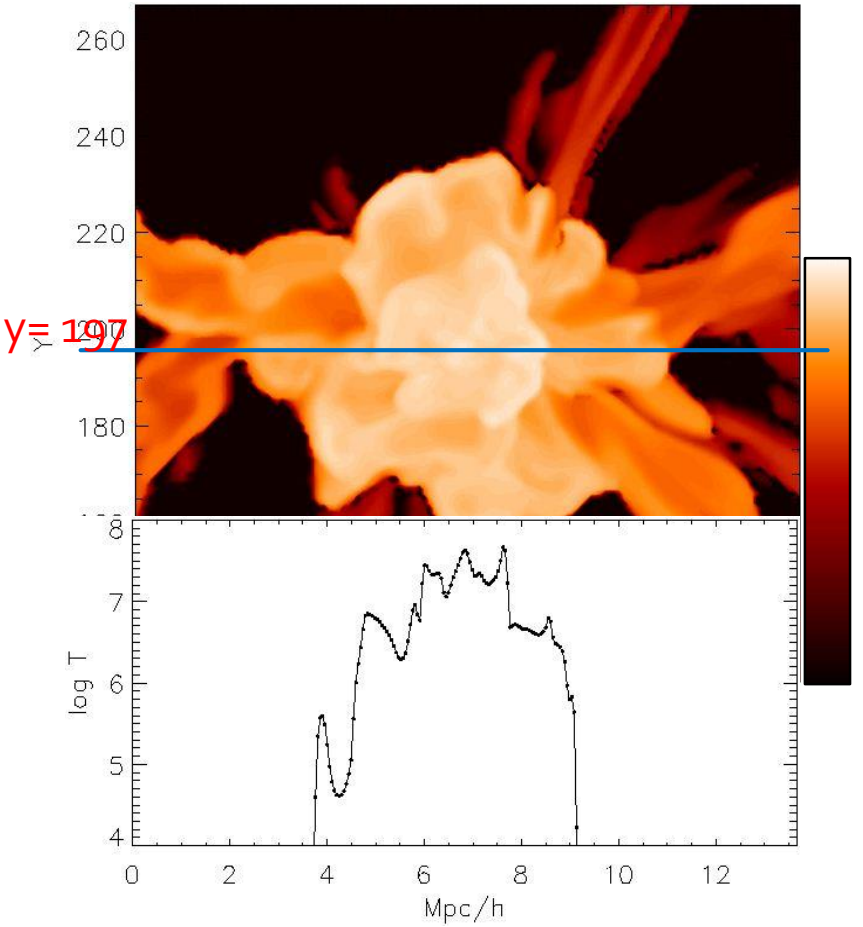


DENSITY/TEMPERATURE CONTOUR

Z = 142 cross section

140 : 13.67Mpc





VELOCITY FIELD

Z = 142 cross section

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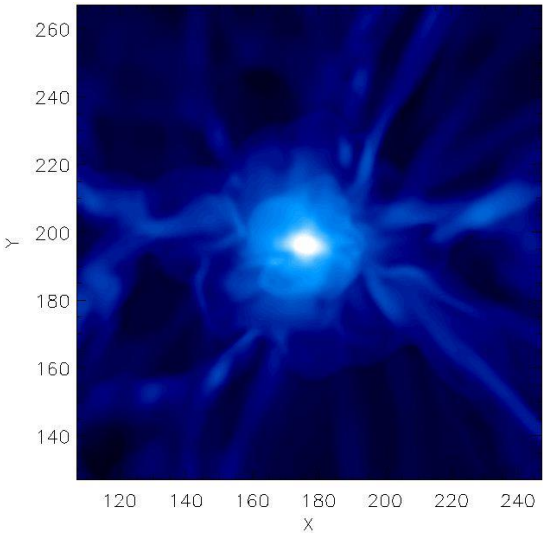
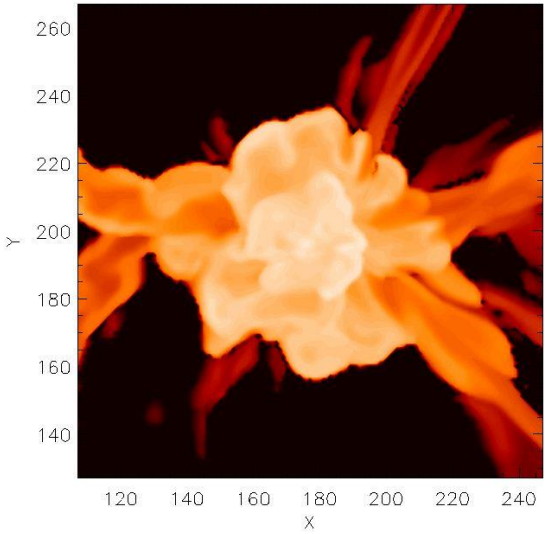
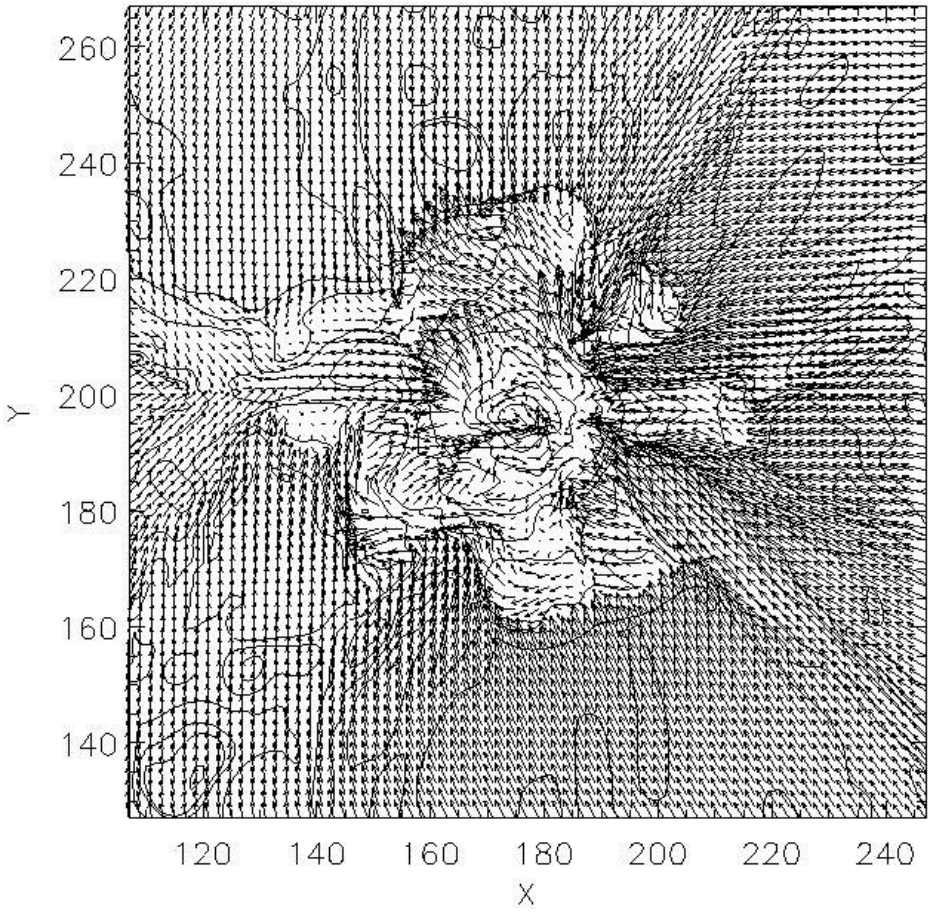


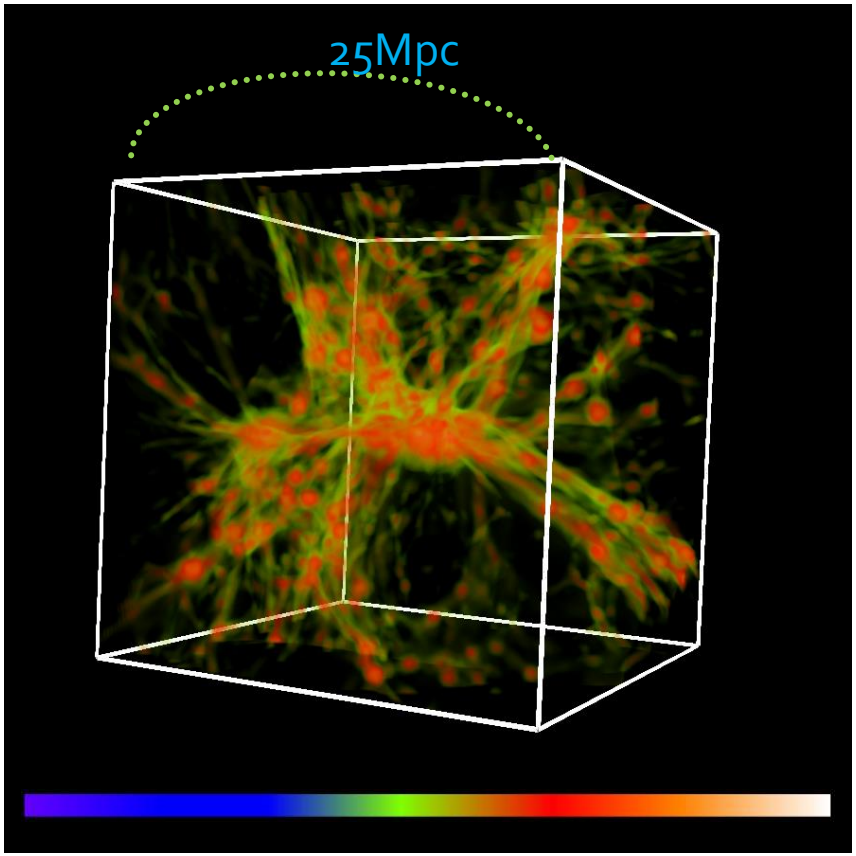


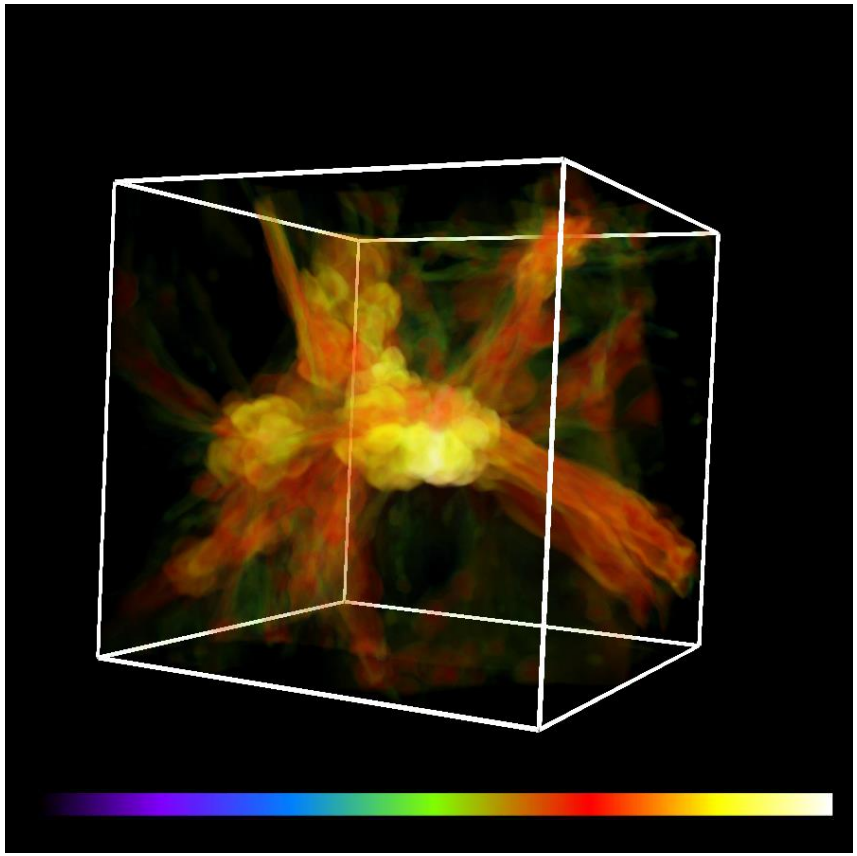


DENSITY 3D, TEMPERATURE 3D

256^3 cube

1024 : 100Mpc = 256 : 25Mpc

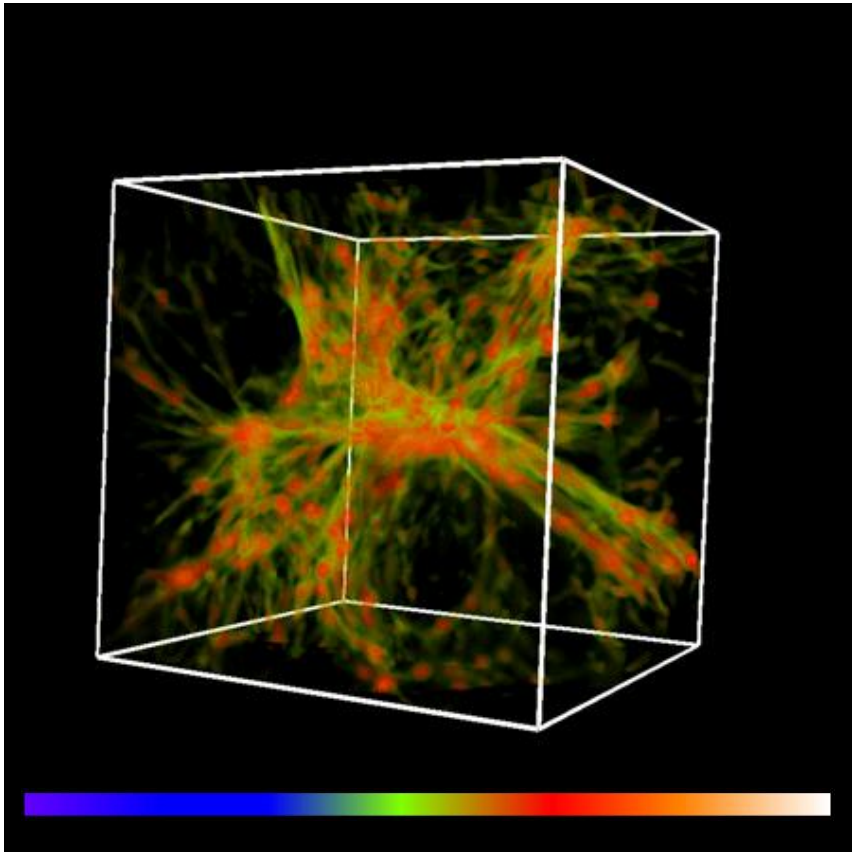


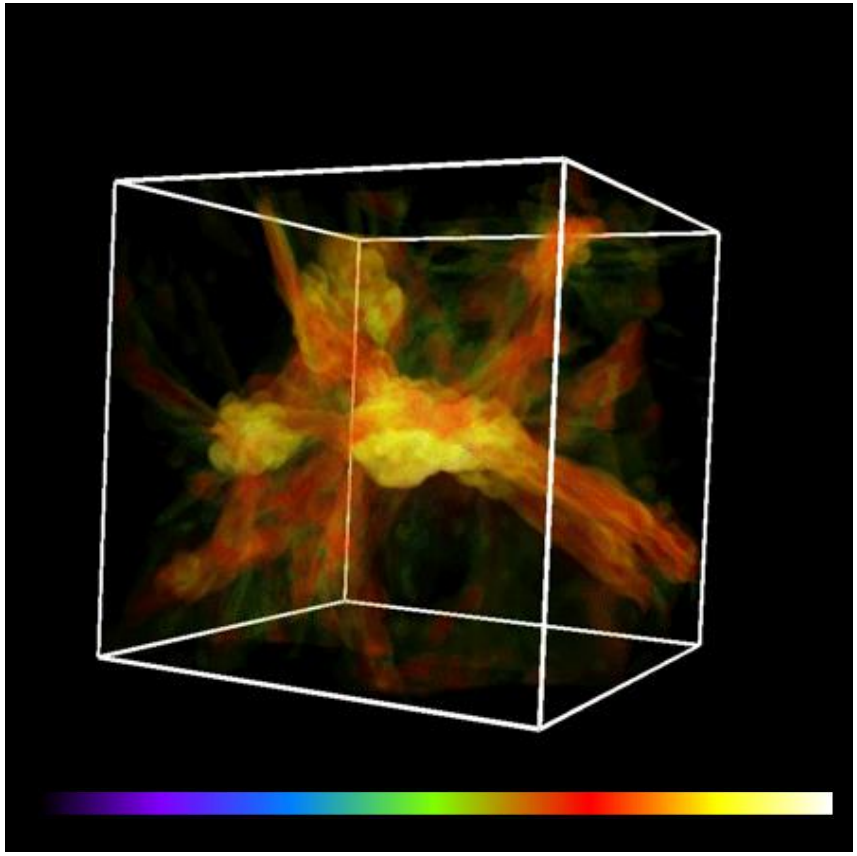


MOVIE

256^3 cube

1024 : 100Mpc = 256 : 25Mpc



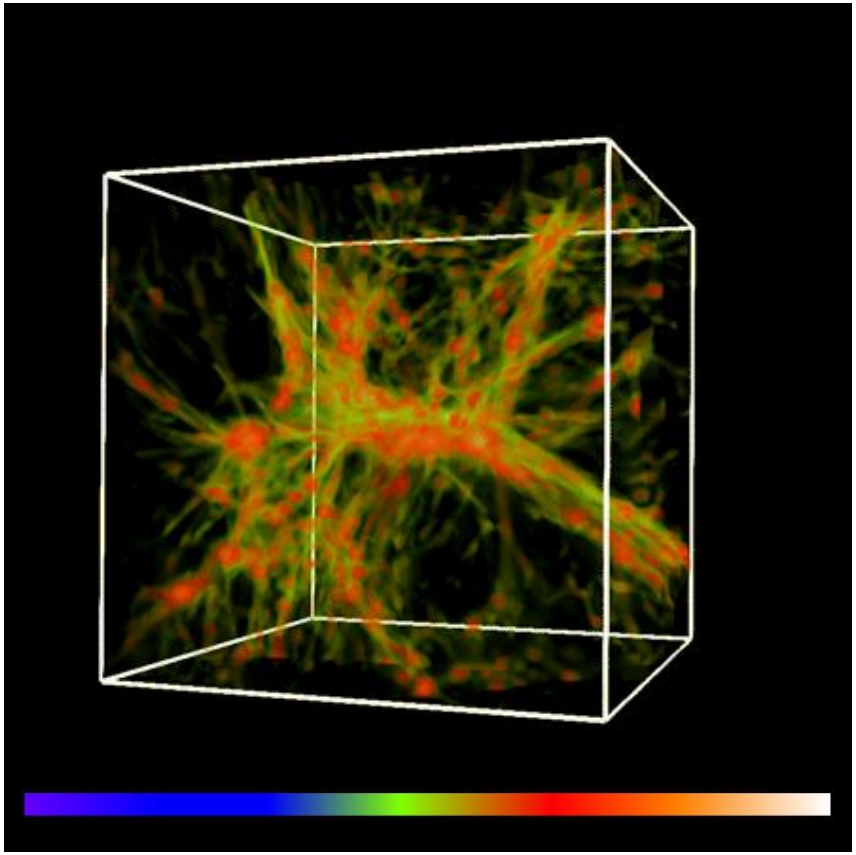


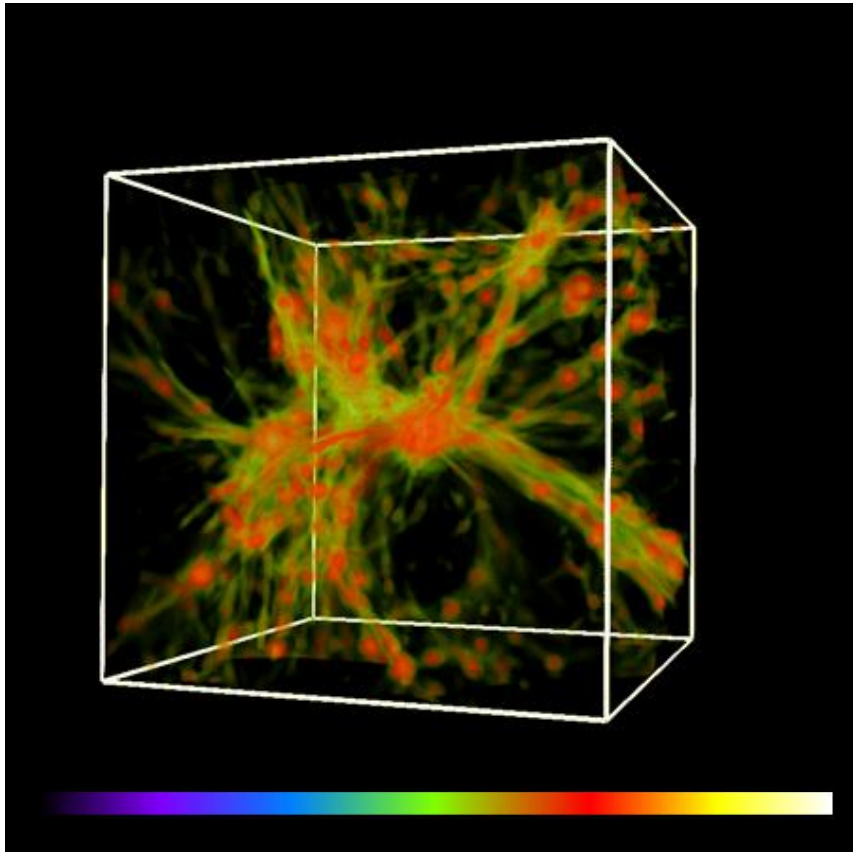
Red Shift(z) = 0.5 ⇒ 0

MOVIE

256^3 cube

1024 : 100Mpc = 256 : 25Mpc





Red Shift(z) = 0.5 ⇒ 0

MOVIE

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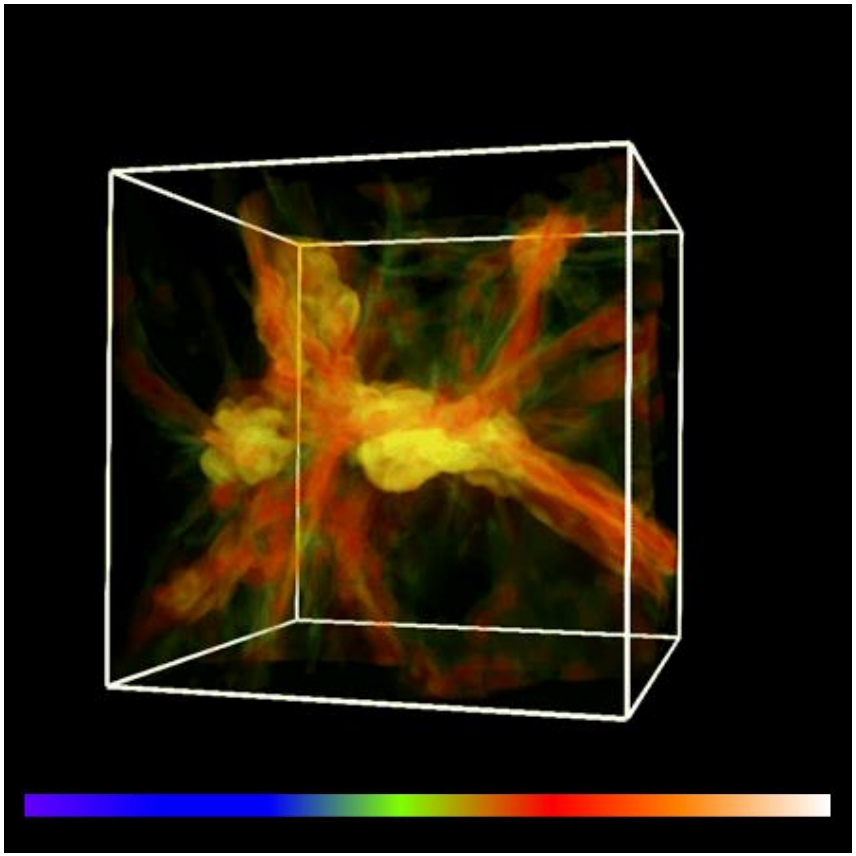

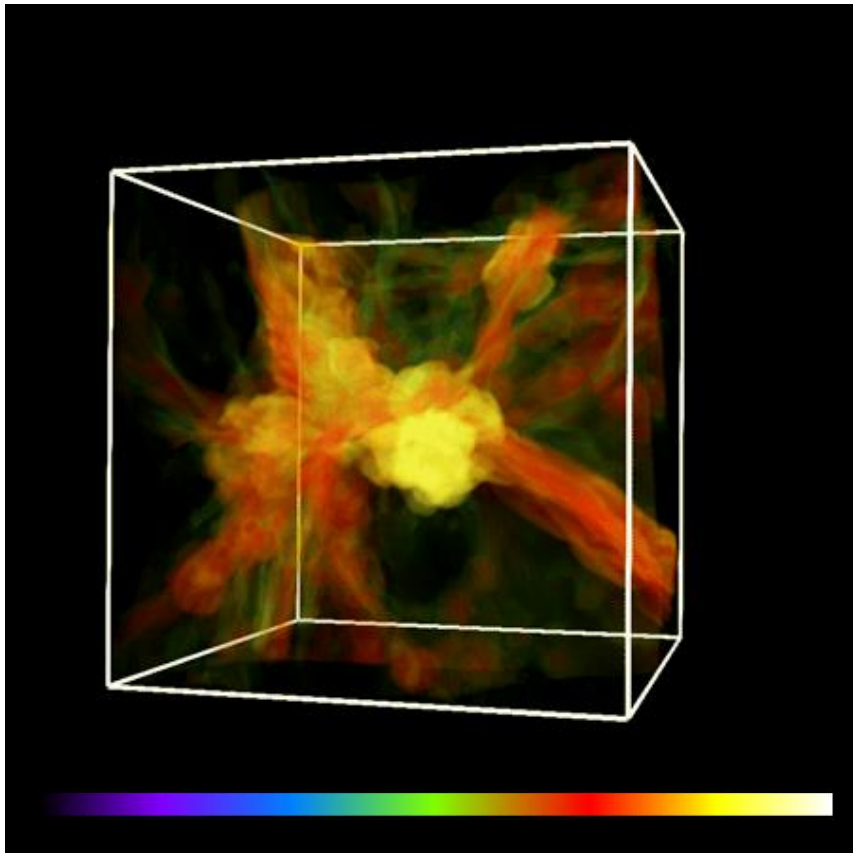

Red Shift(z) = 0.5 ⇒ 0

SUMMARY

- - I researched the Distribution Analysis of Density, Temperature, and Velocity field around the Clusters in varying way.

- - I made the Cluster evolution movie, and I have found Around the Cluster center undergoing rapid change.

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THANK YOU