

Studying Dark Energy by Mapping Neutral Hydrogen with CHIME

~~Mark Halpern~~

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CIFAR Global Scholar

John A. Galt Symposium
September 23, 2014



a place of mind

CIFAR



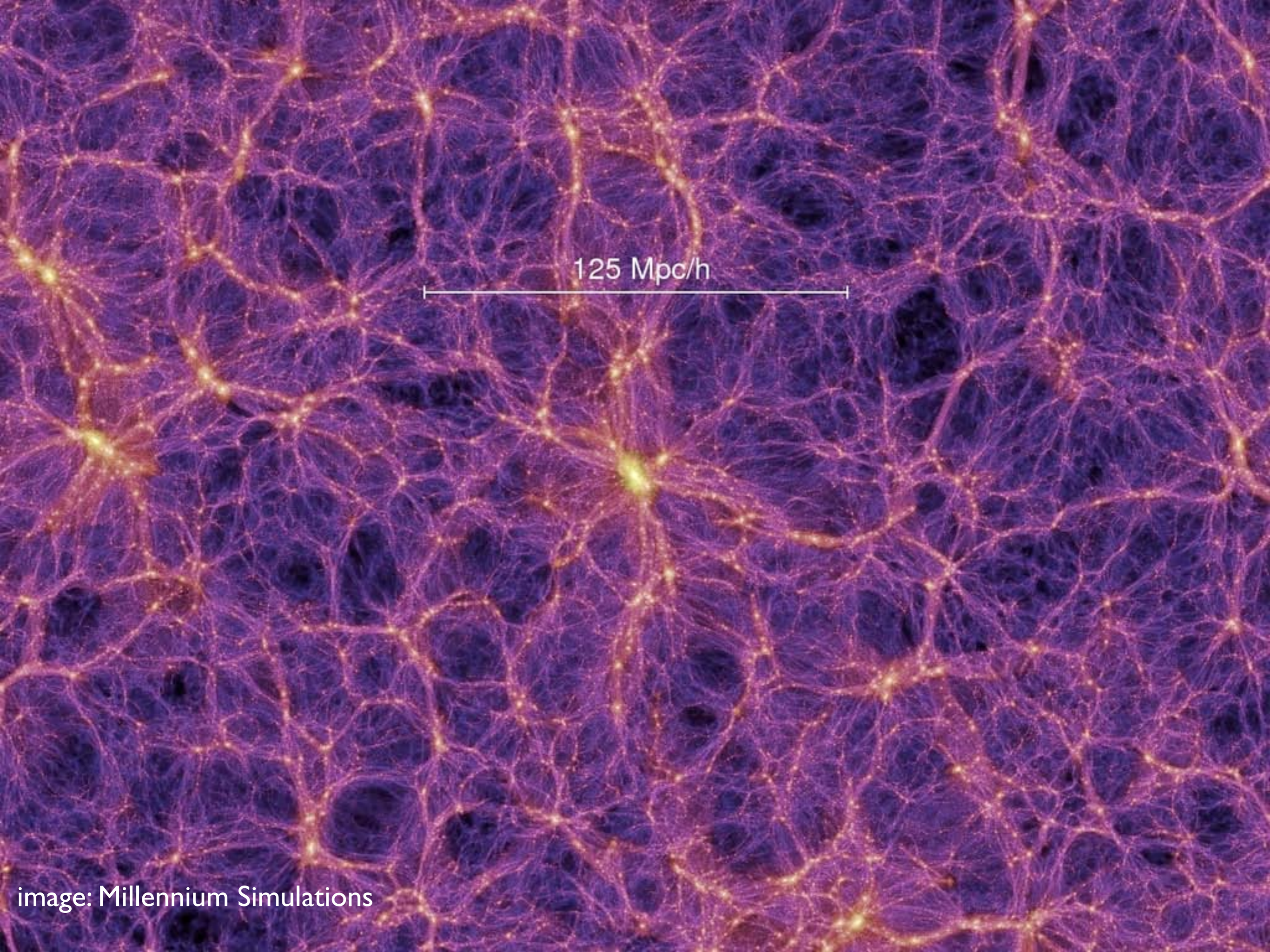
McGill



chime



Large-scale structure
science with 21 cm



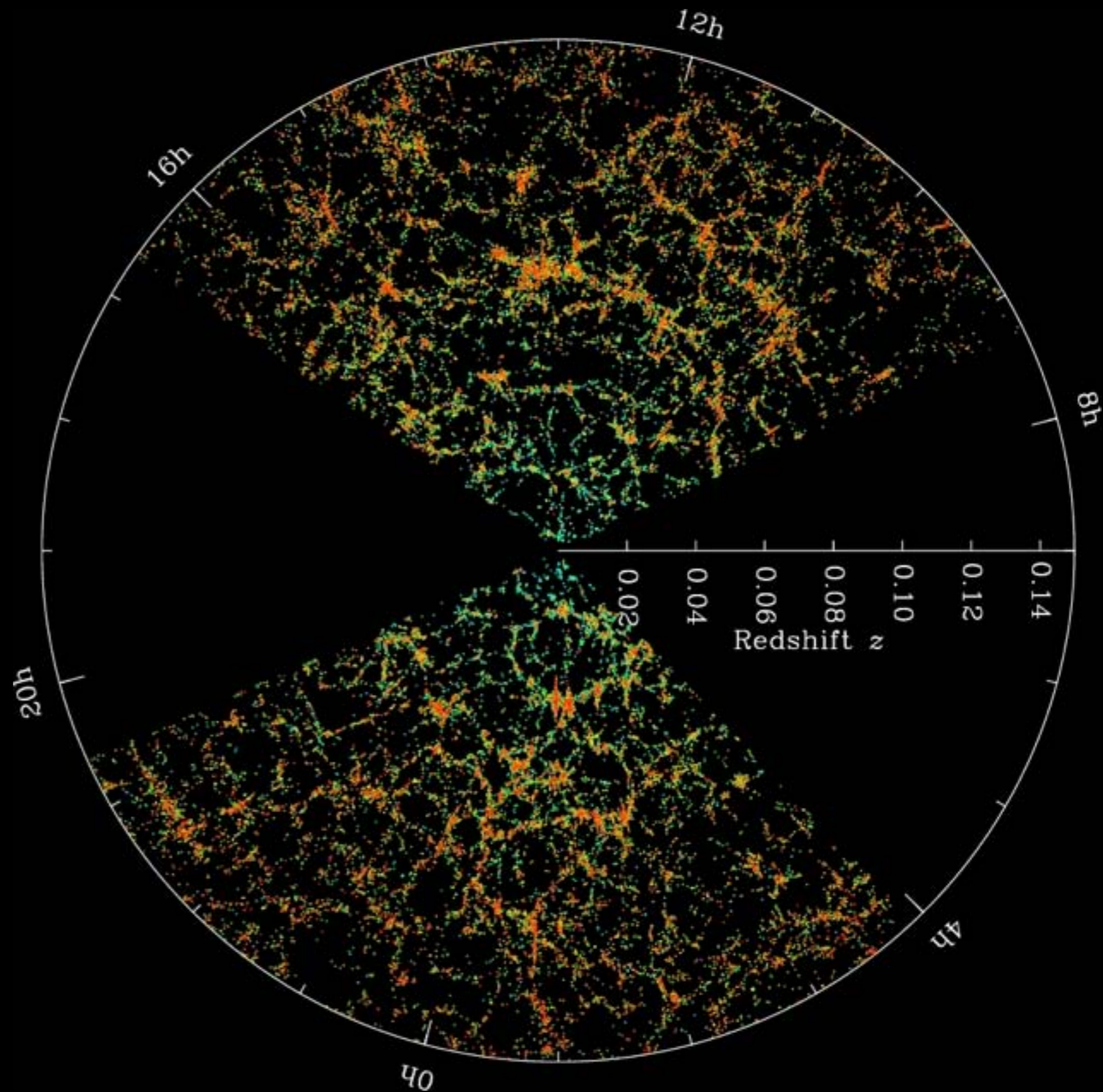
125 Mpc/h

image: Millennium Simulations

Why map large-scale structure in the radio?



We already have
the Sloan Digital
Sky Survey and
other visible-light
surveys



Hydrogen glows in the radio, and the Universe is full of hydrogen.

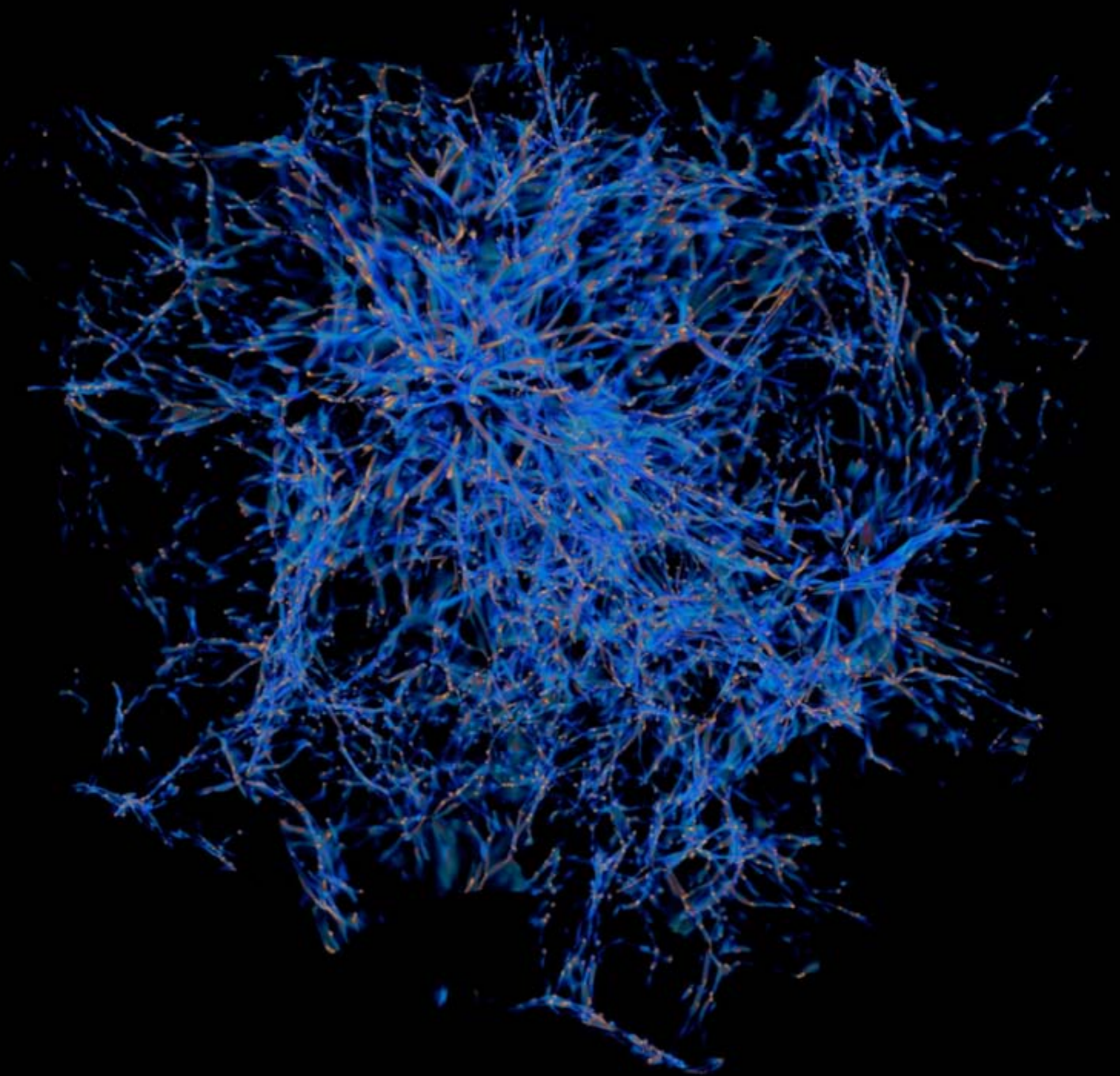
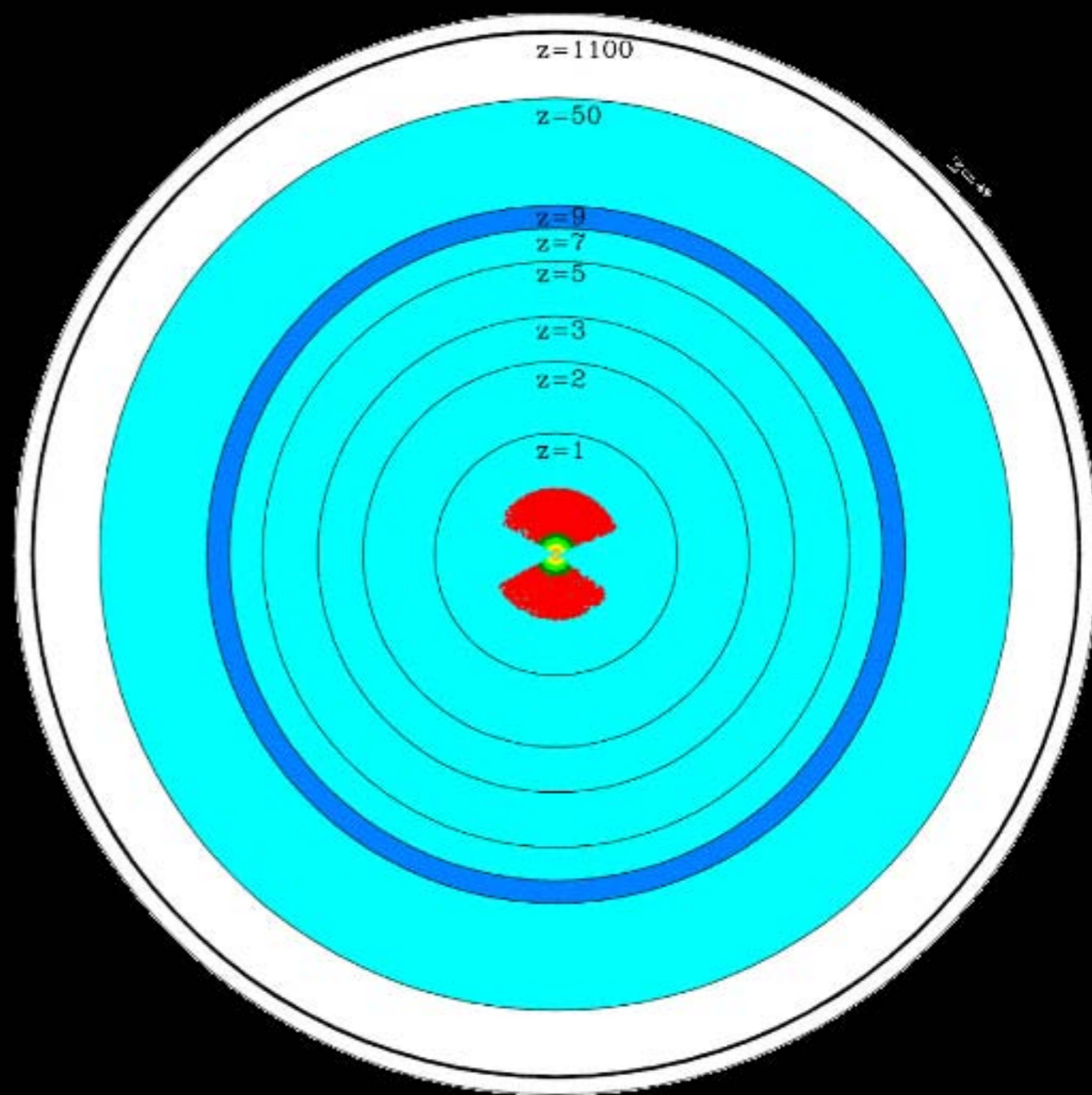
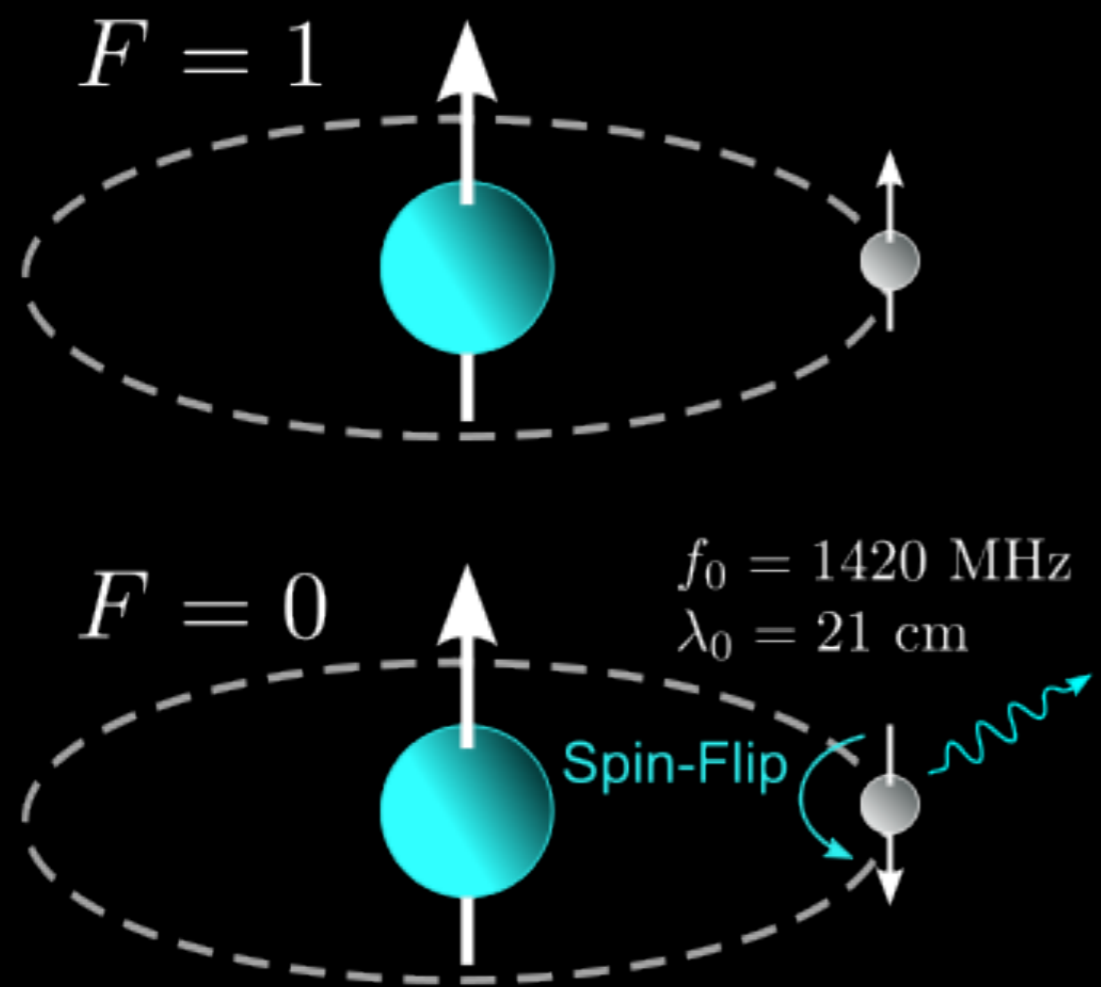
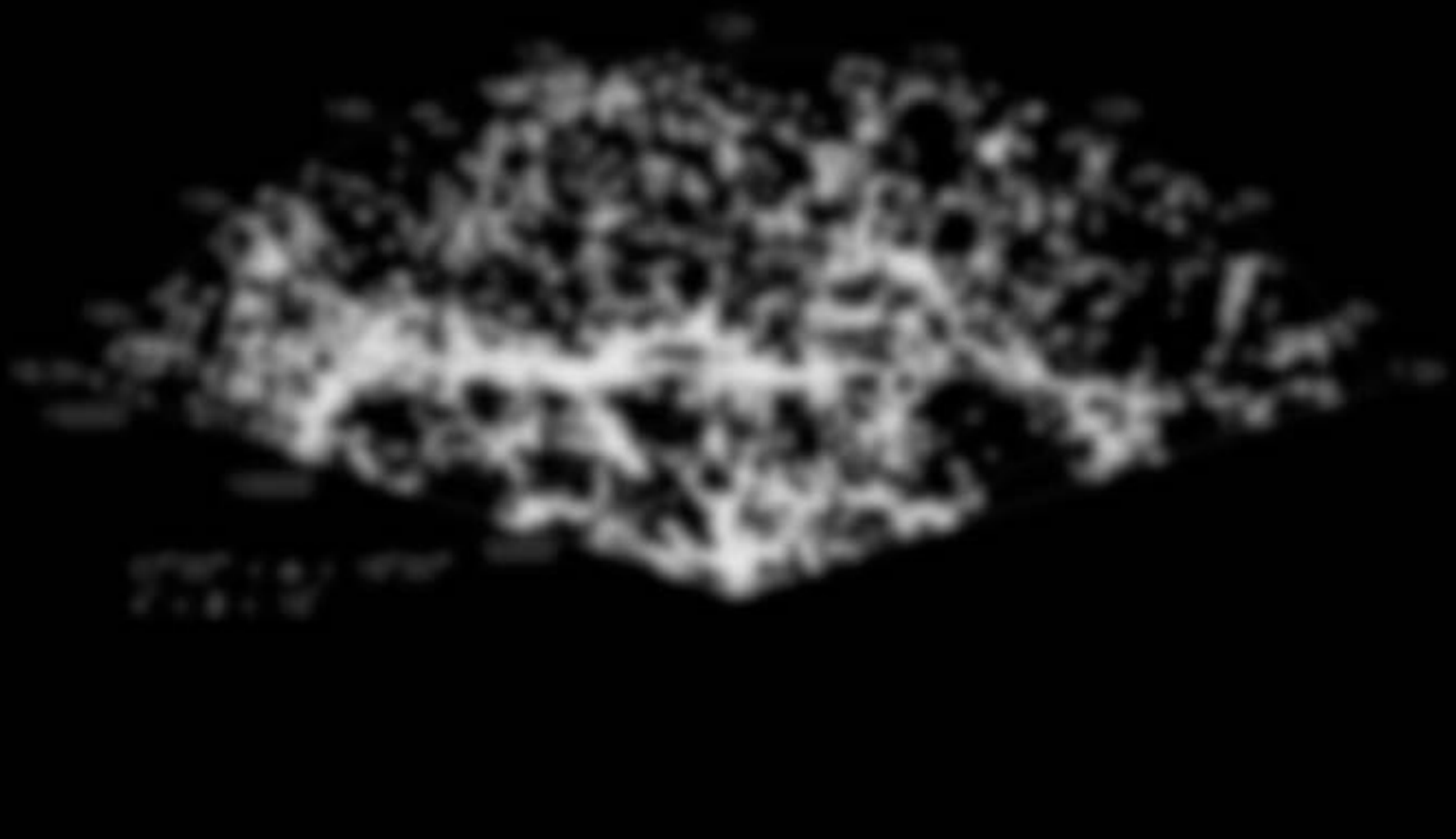
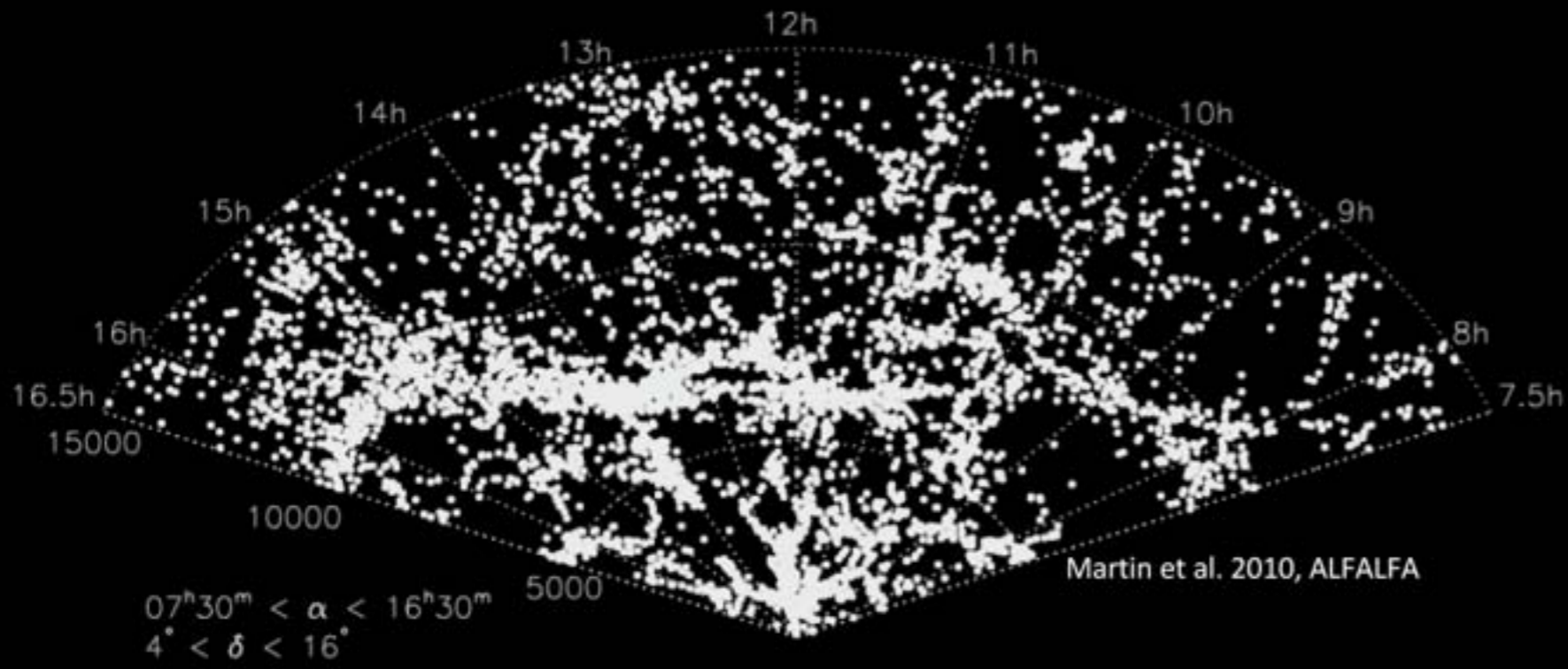


image: Renyue Cen's webpage





CHIME and Dark Energy

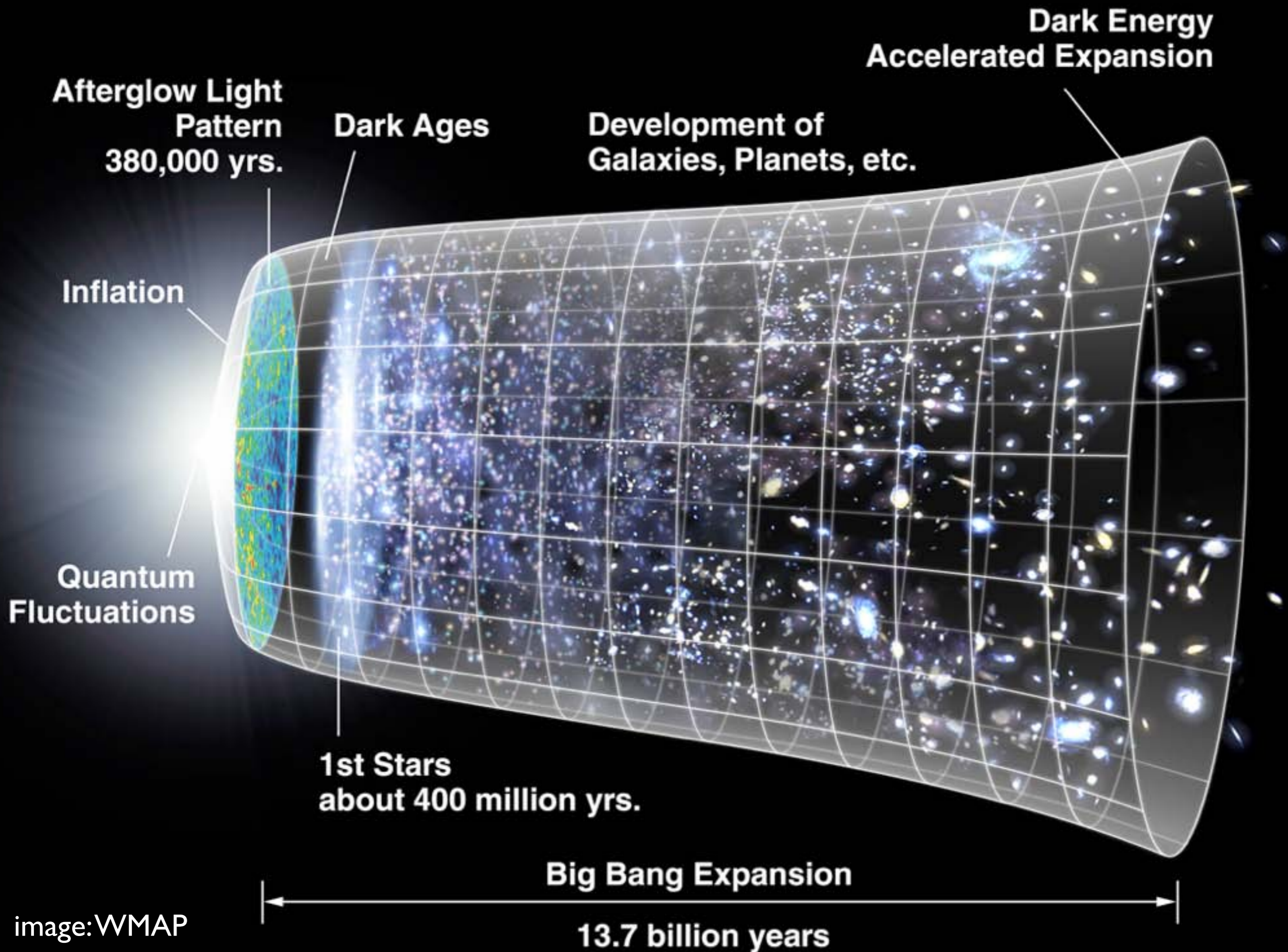
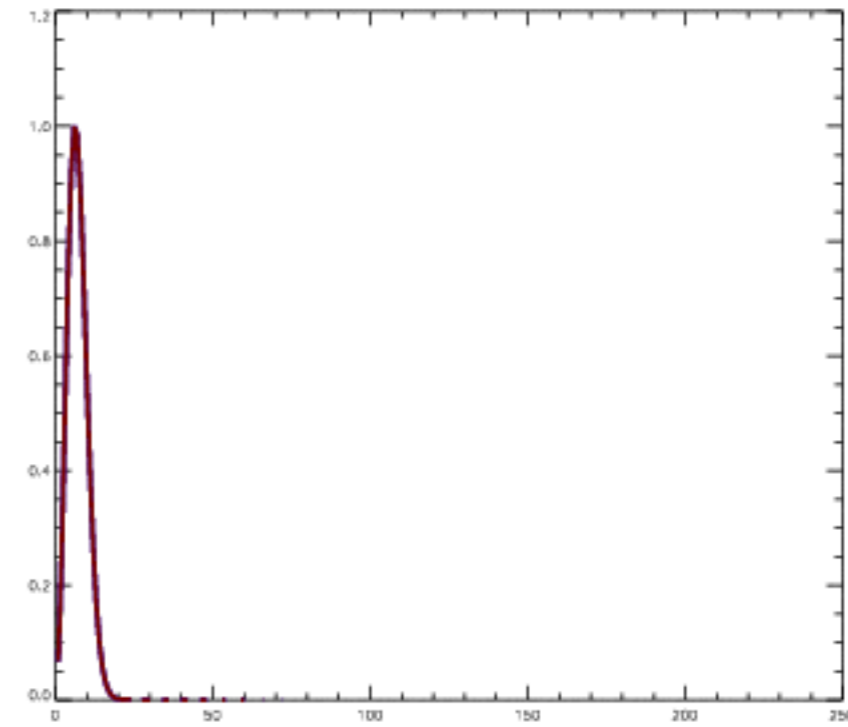
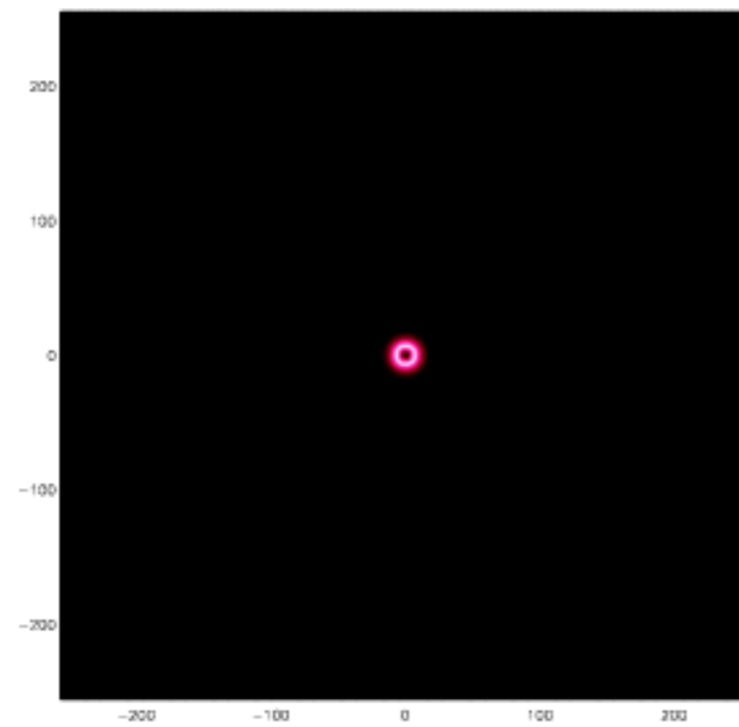
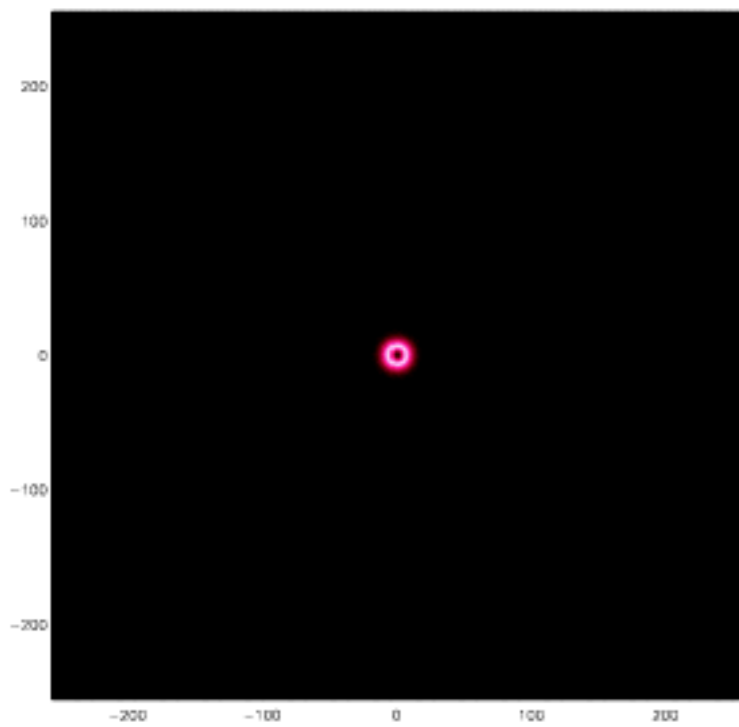
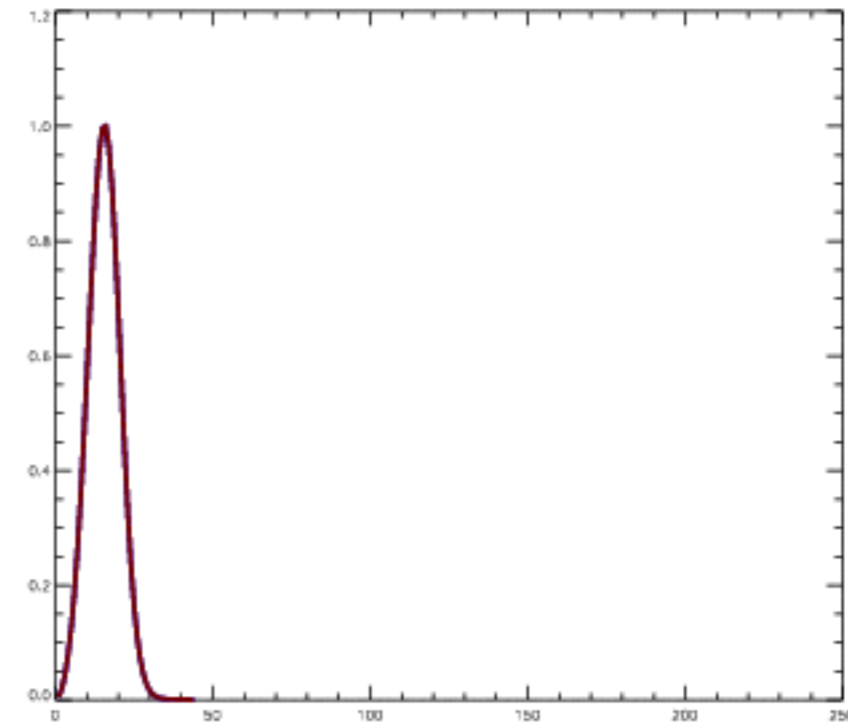
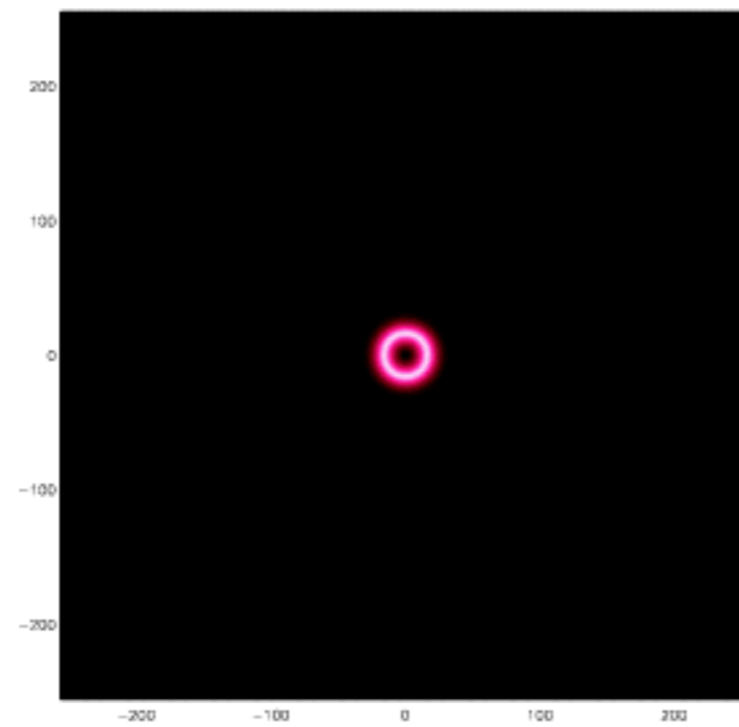
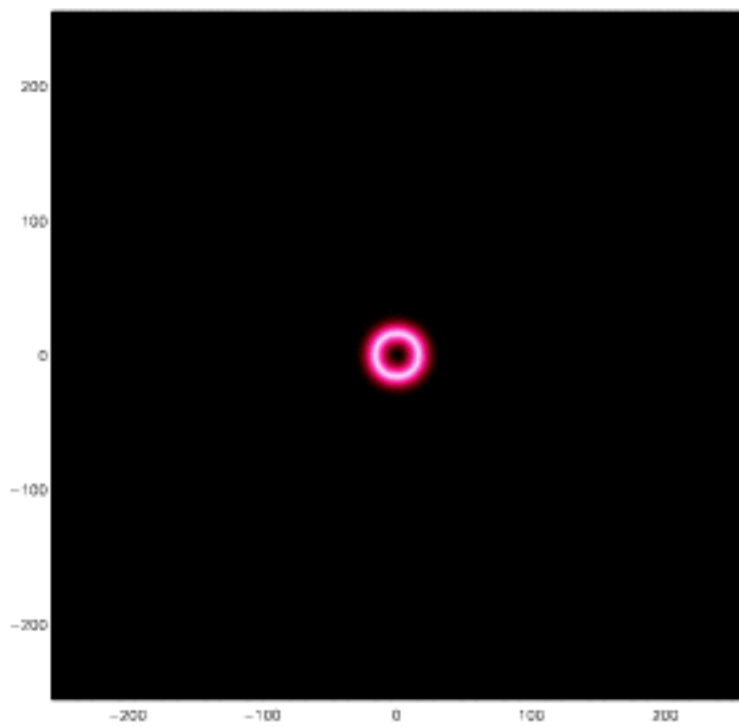


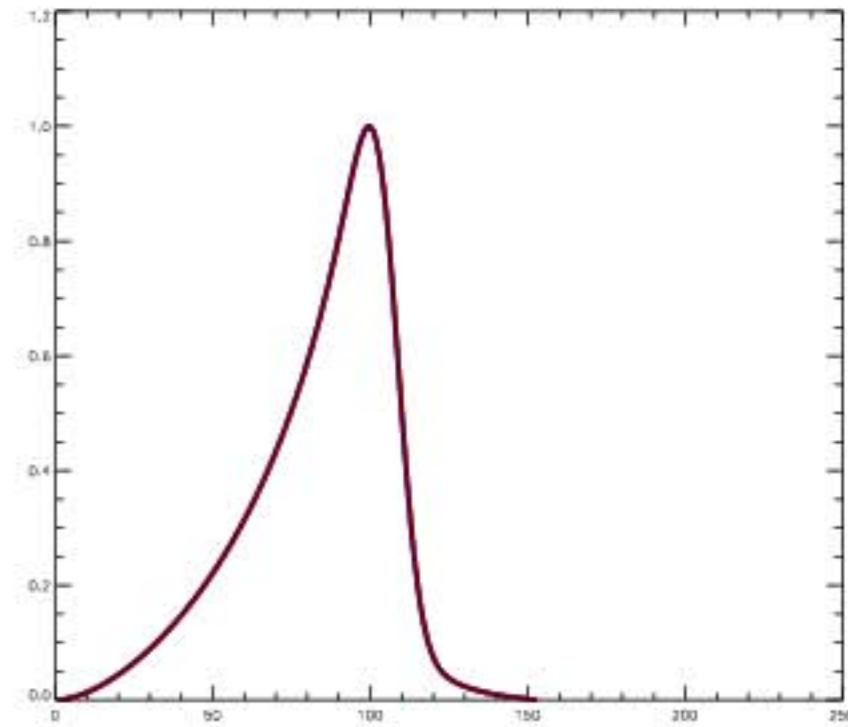
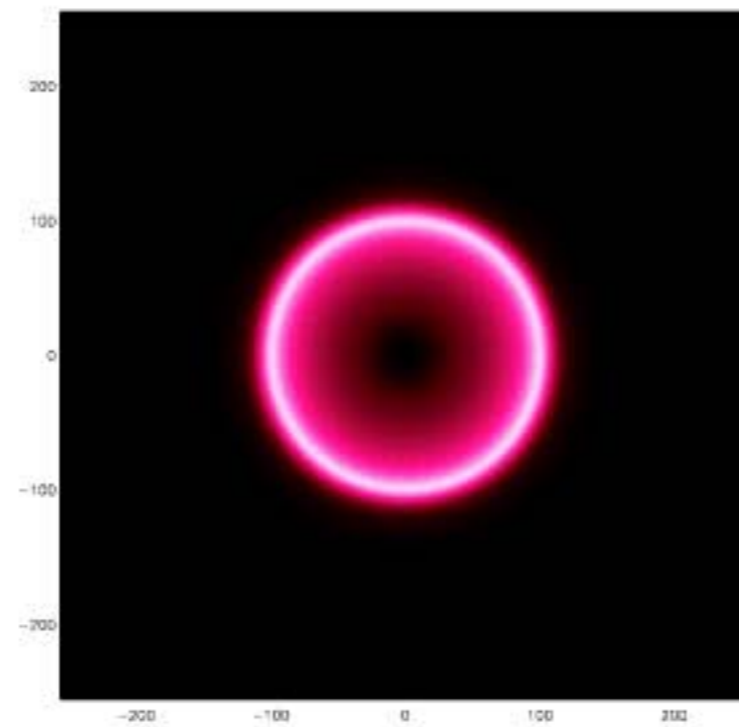
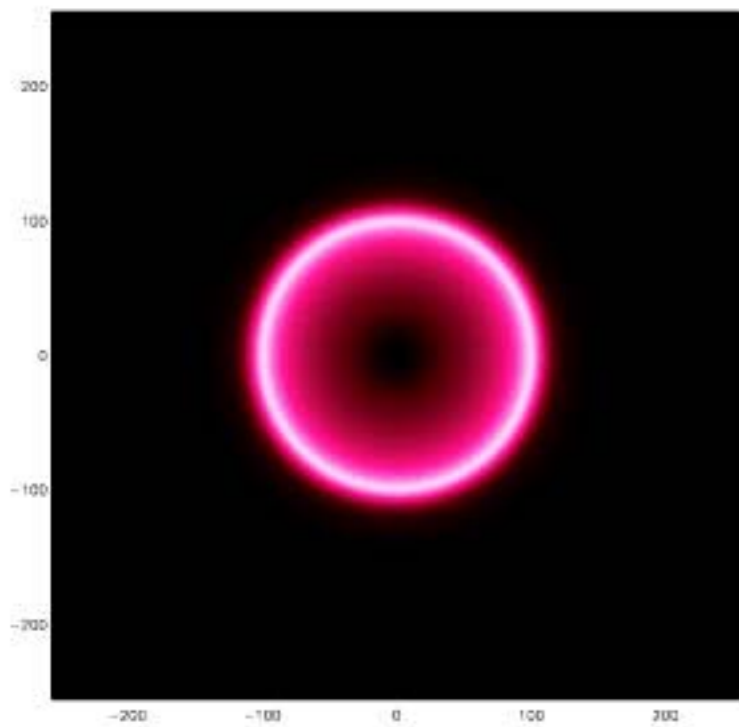
image:WMAP



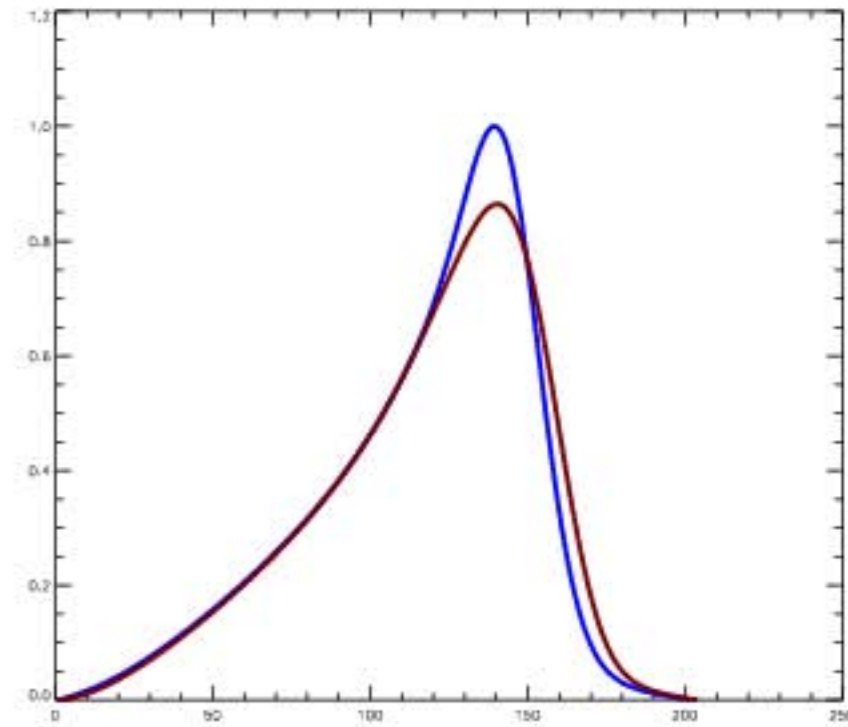
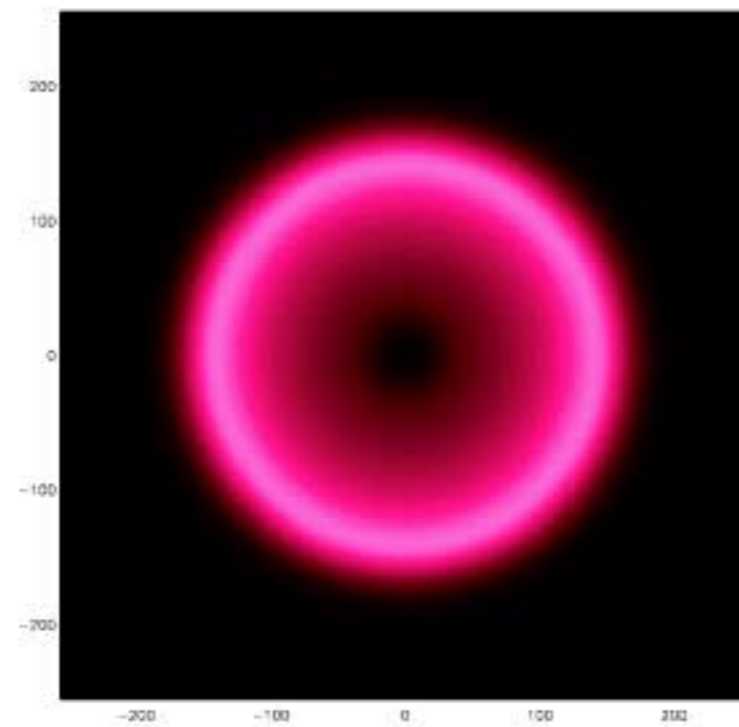
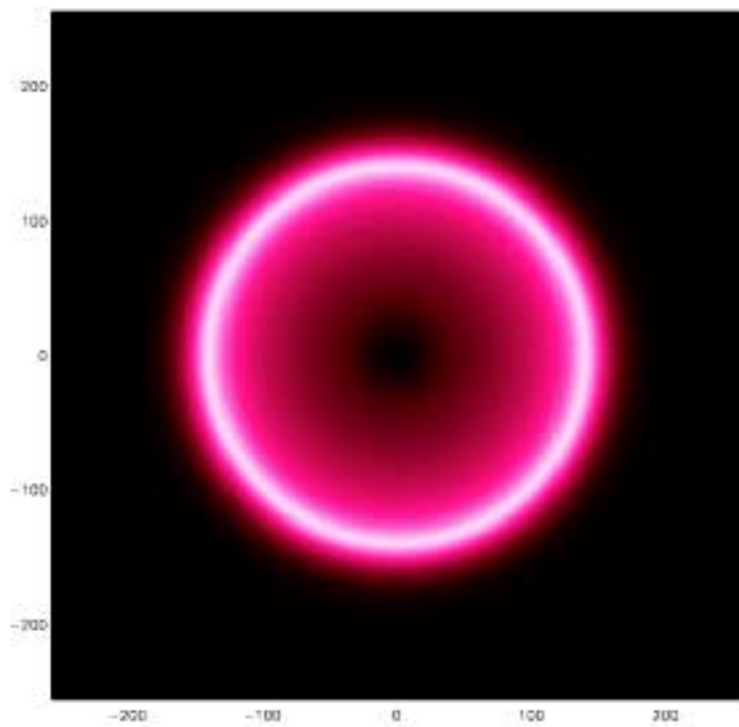
Animation by Martin White



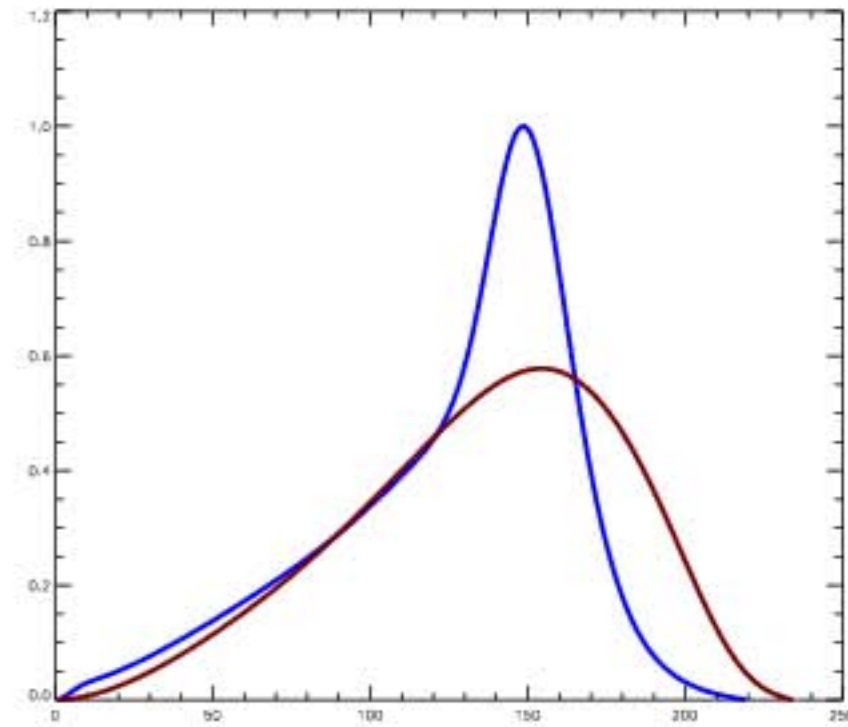
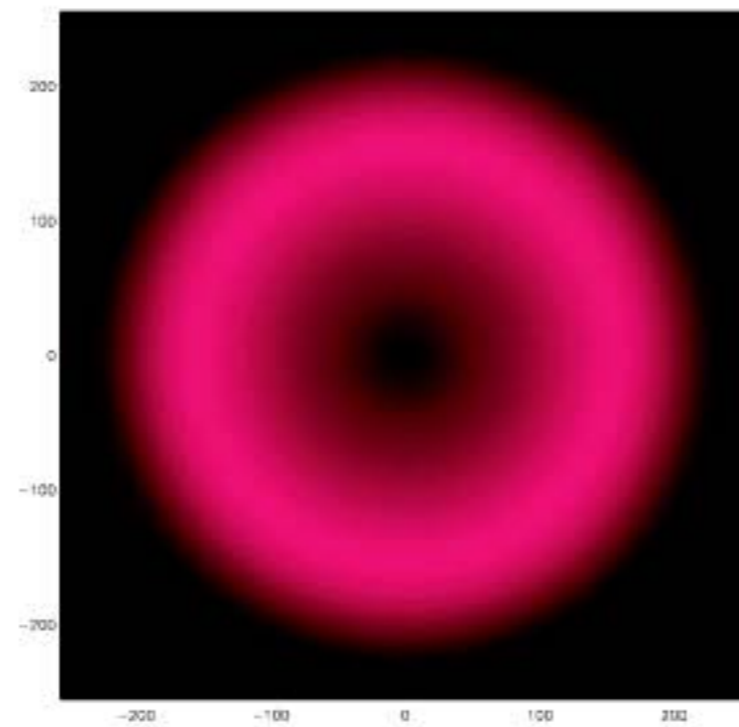
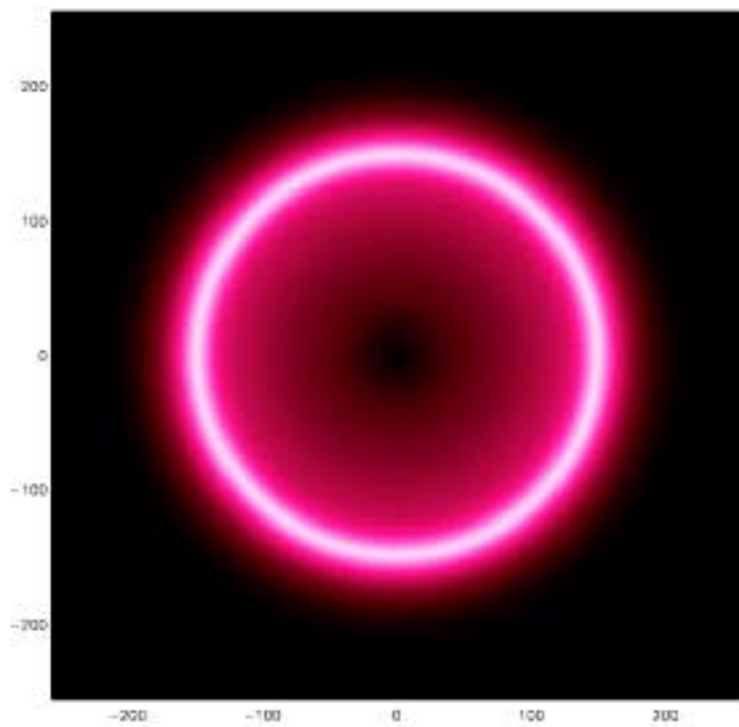
Animation by Martin White



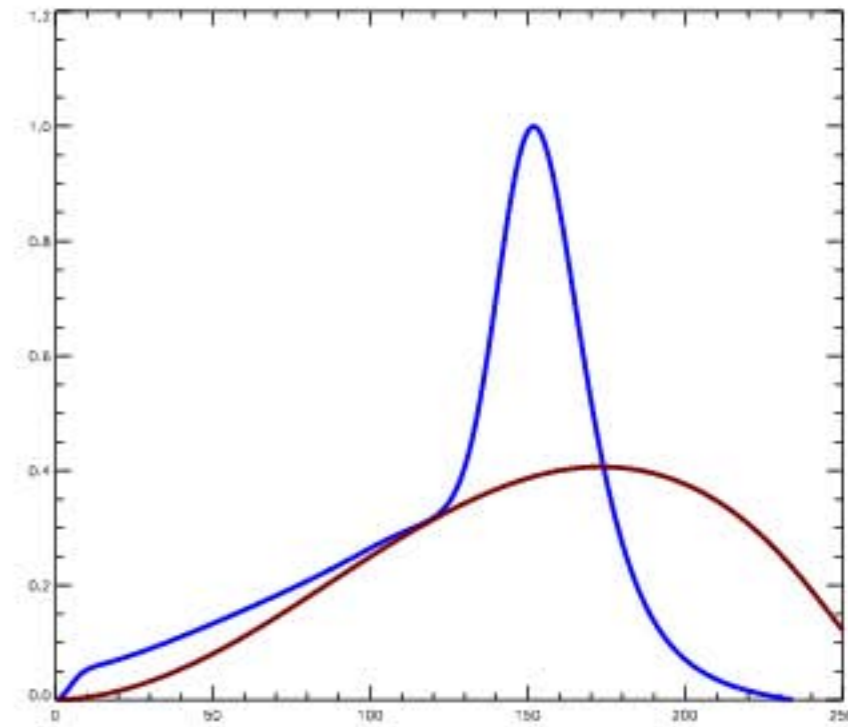
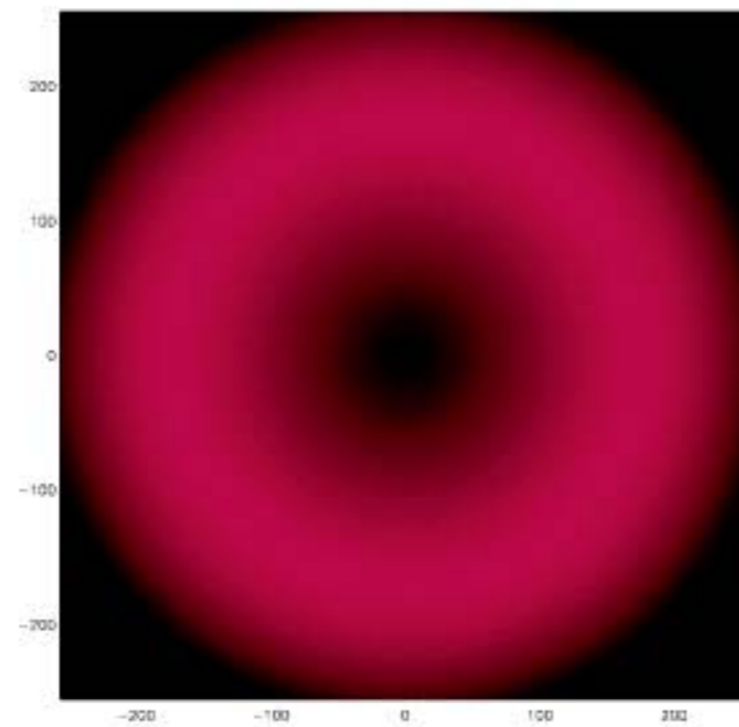
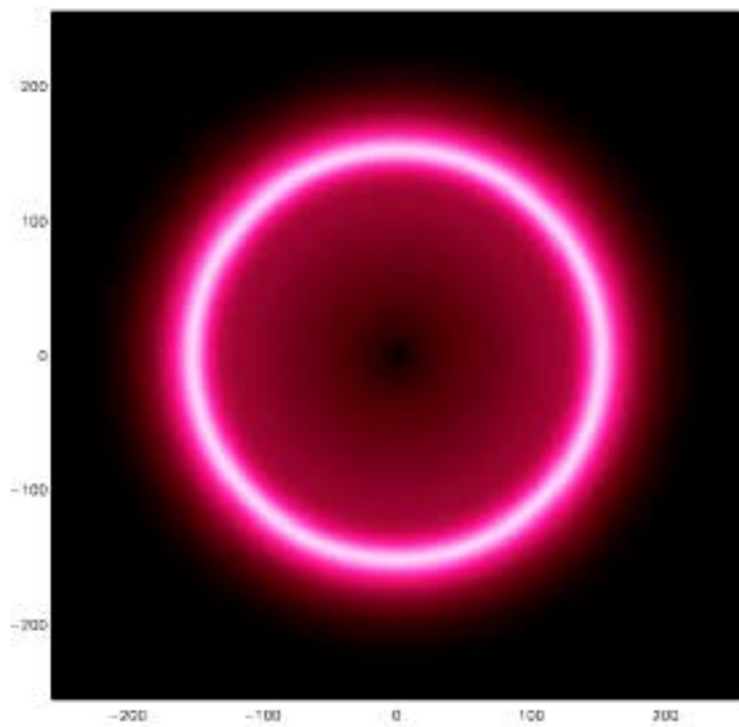
Animation by Martin White



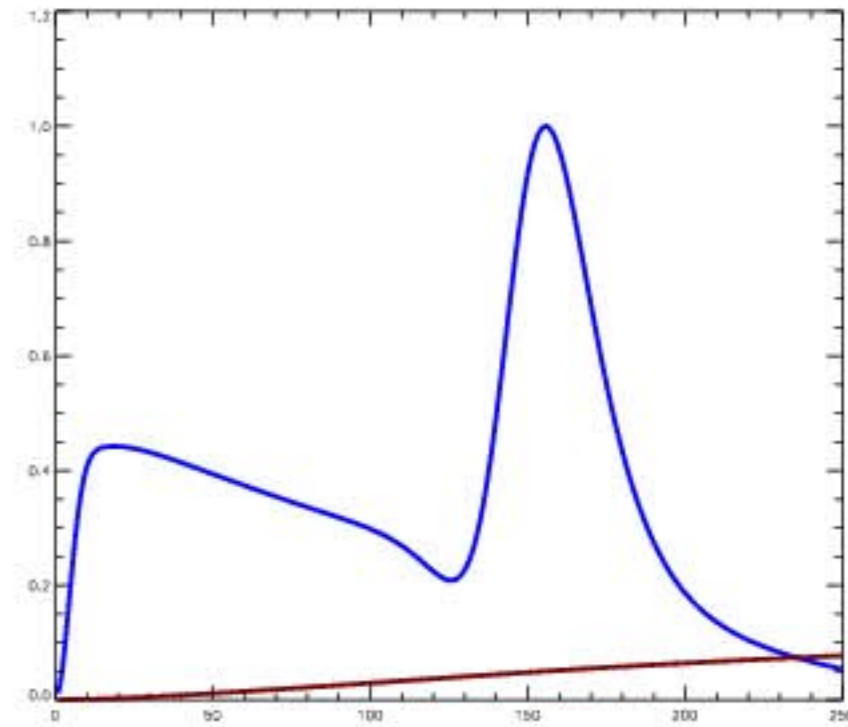
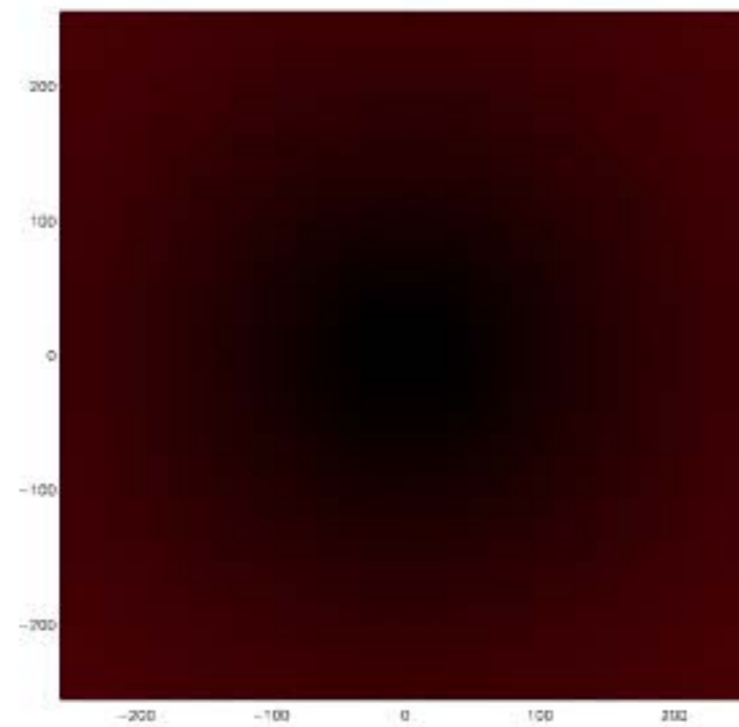
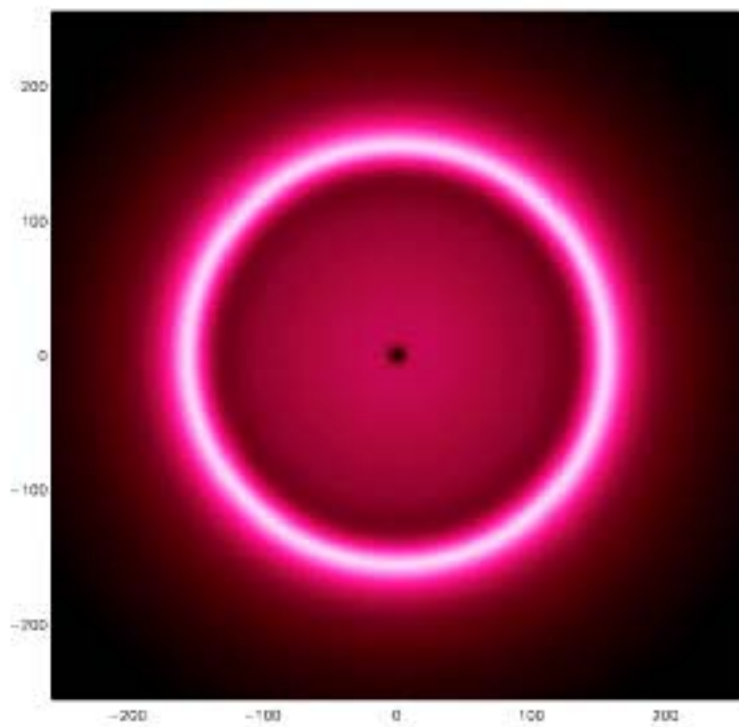
Animation by Martin White



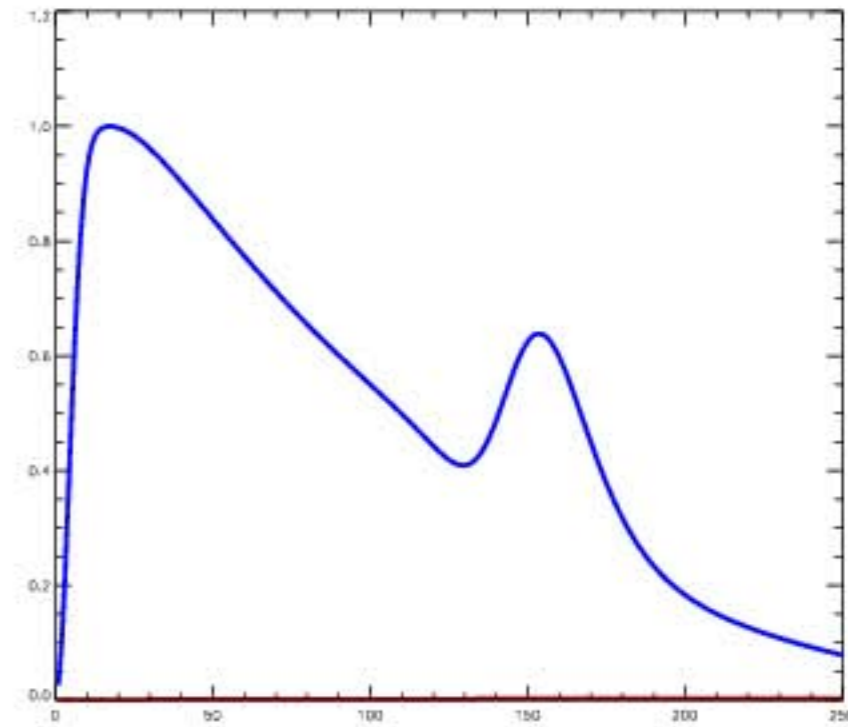
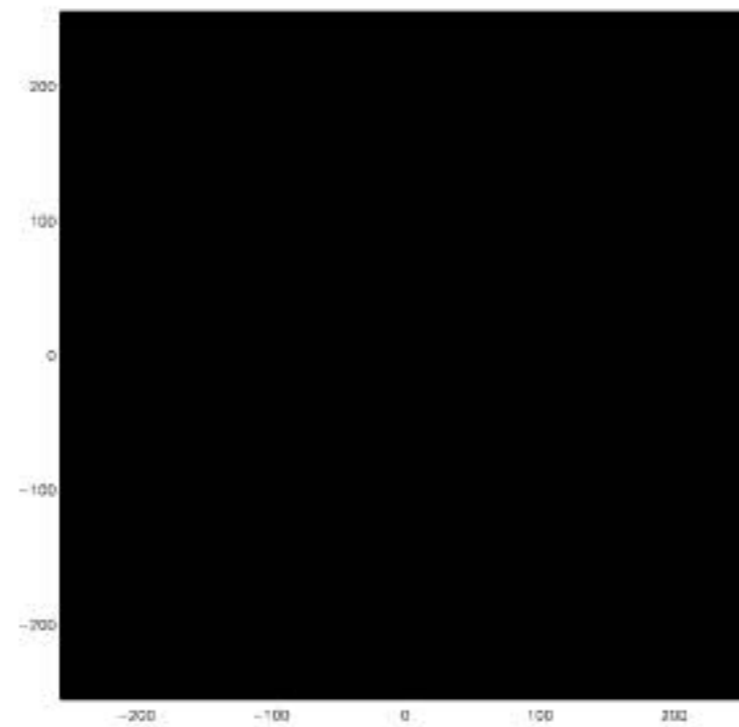
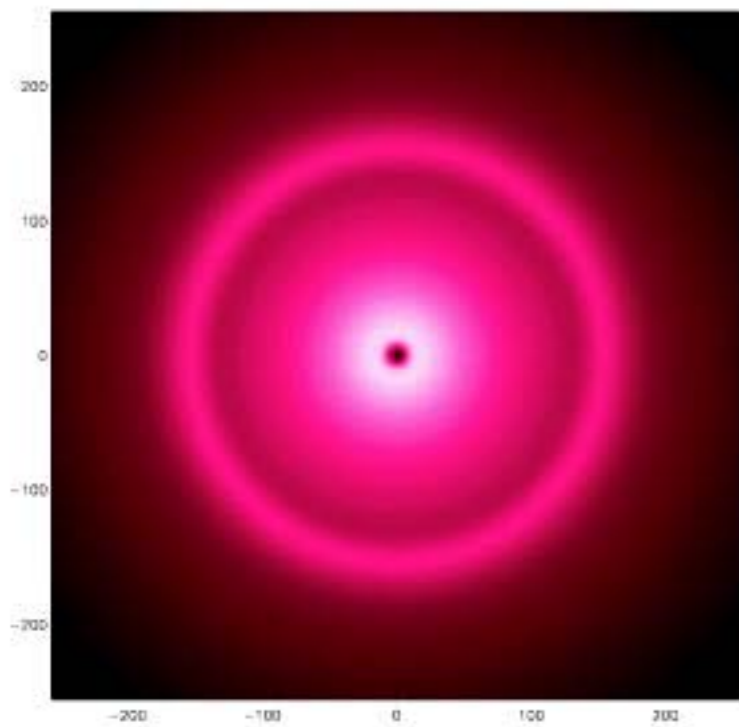
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