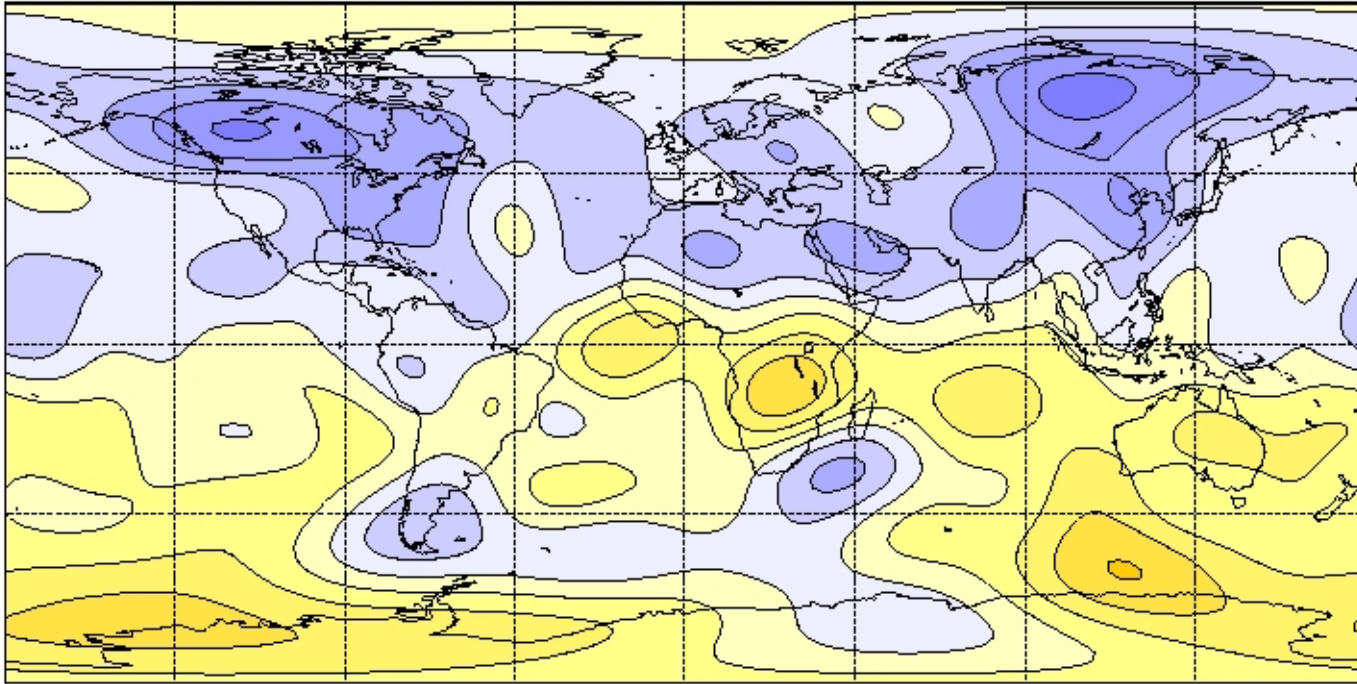


Dynamo Theory: from experiments to galaxy clusters (via planets and stars)

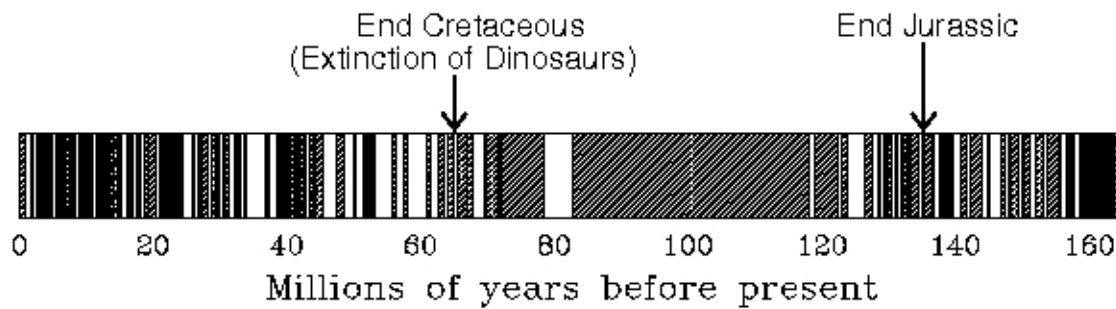
Steve Tobias (Leeds, U.K.)



Earth



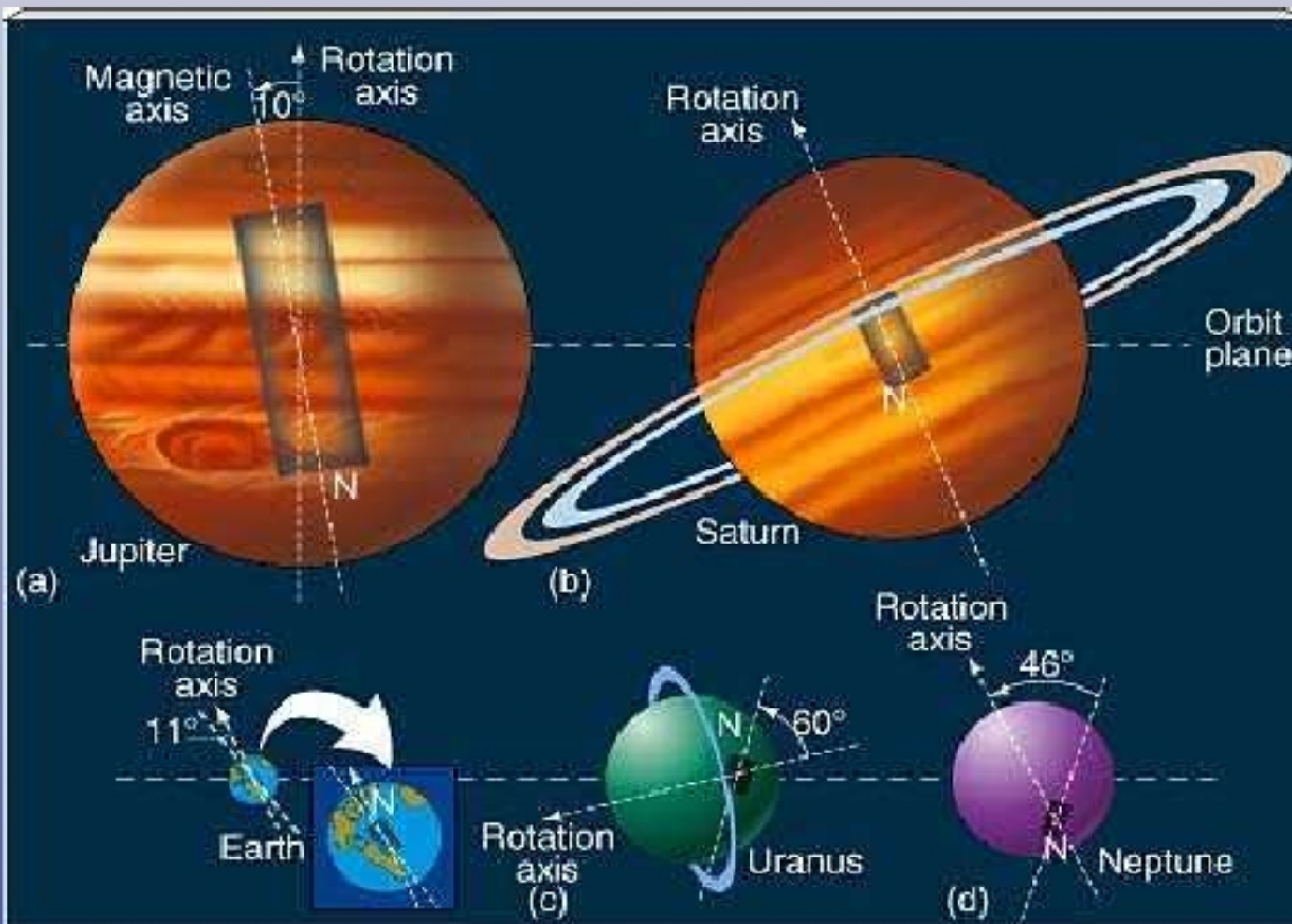
Bloxham & Jackson (B_r , CMB)



0.3-0.6 G at Earth's surface

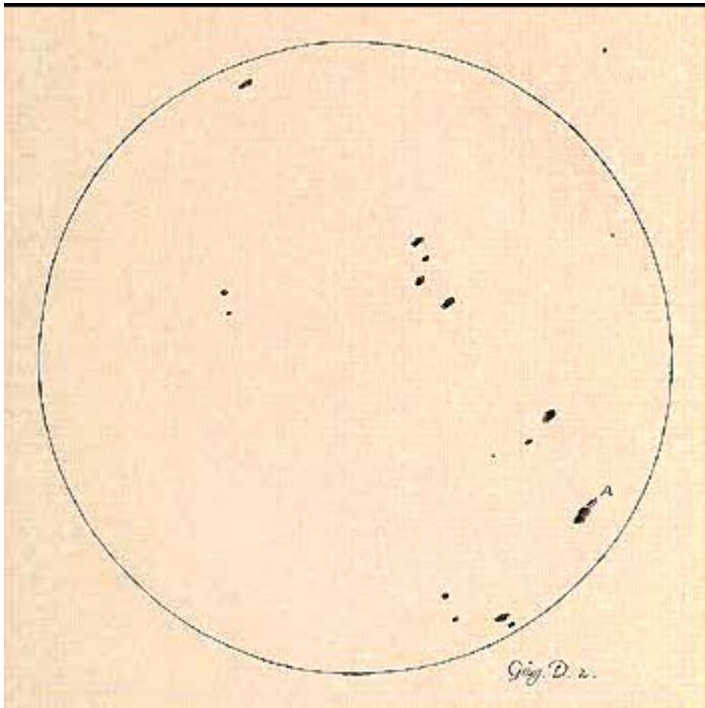
Planets

Courtesy P. Olson

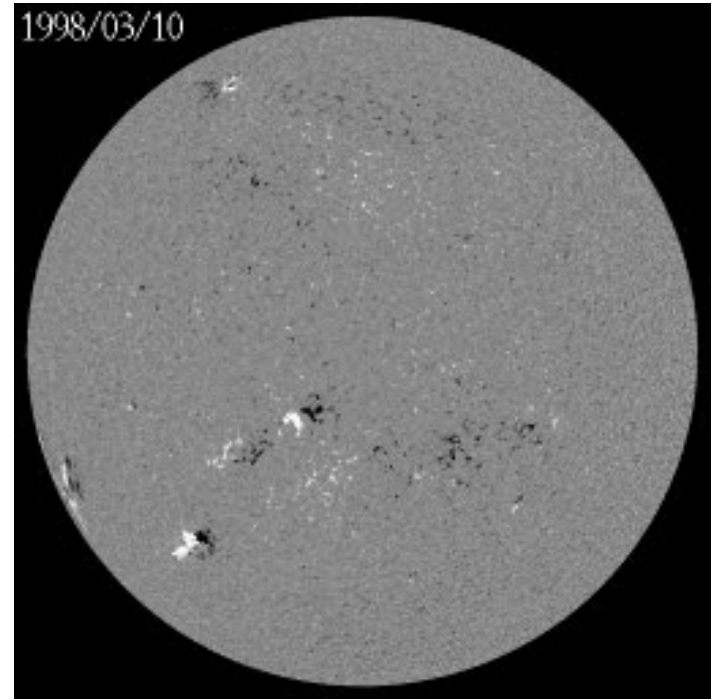


Jupiter ~ 10G
Saturn ~ 0.2G
Neptune* ~ 0.01G
Uranus* ~ 1G

The Sun



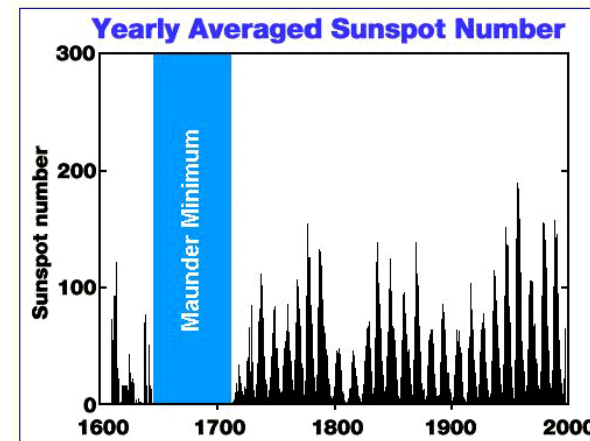
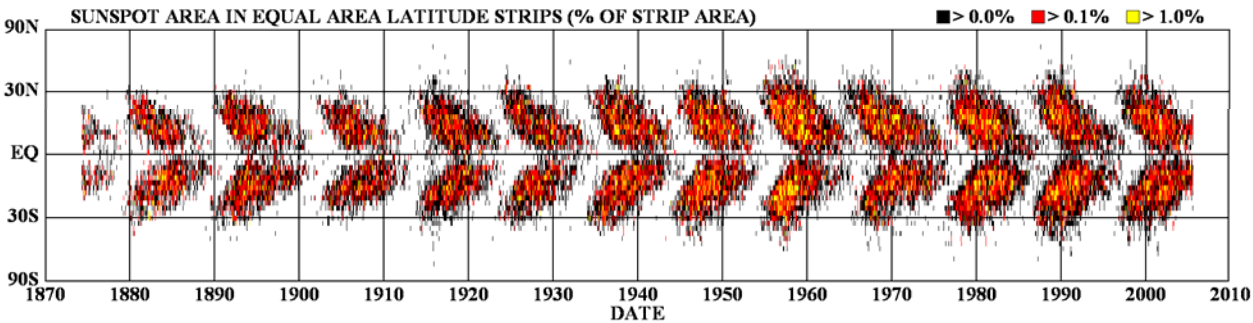
Galileo



Magnetogram

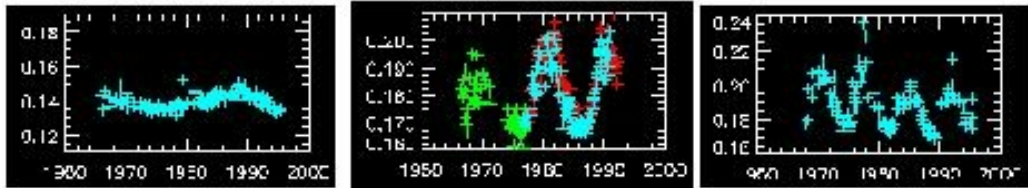
Courtesy David Hathaway

DAILY SUNSPOT AREA AVERAGED OVER INDIVIDUAL SOLAR ROTATIONS

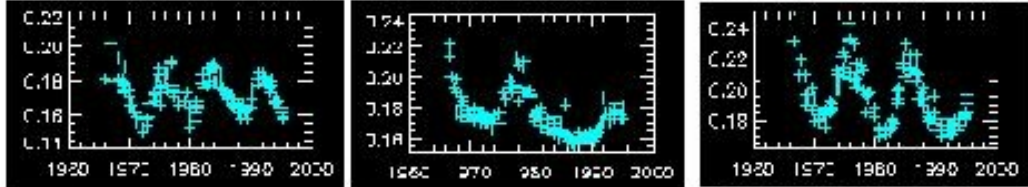


Stars

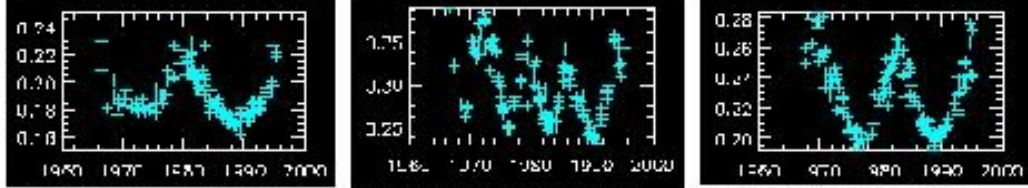
Mount Wilson Survey



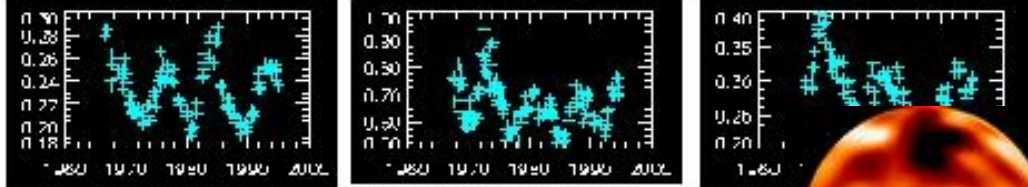
HD 136202 (F8IV-V) 23 yrs The Sun (G2V) 10.0 yrs HD 103095 (G8VI) 7.3 yrs



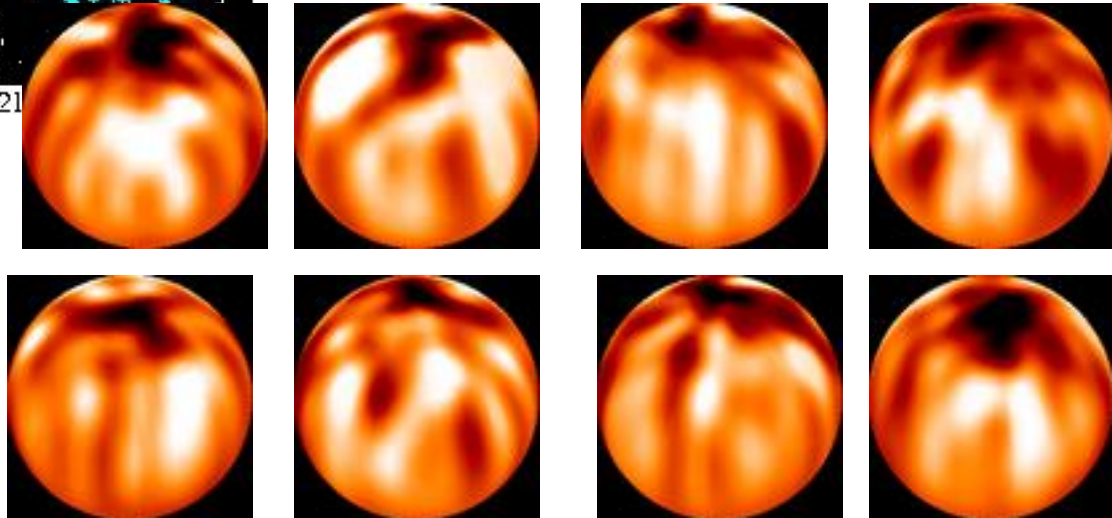
HD 81809 (K0V?) 8.2 yrs HD 3651 (K2V) 13.8 yrs HD 10476 (K1V) 9.6 yrs



HD 166620 (K2V) 15.8 yrs HD 160346 (K3V) 7.0 yrs HD 16160 (K3V) 13.2 yrs

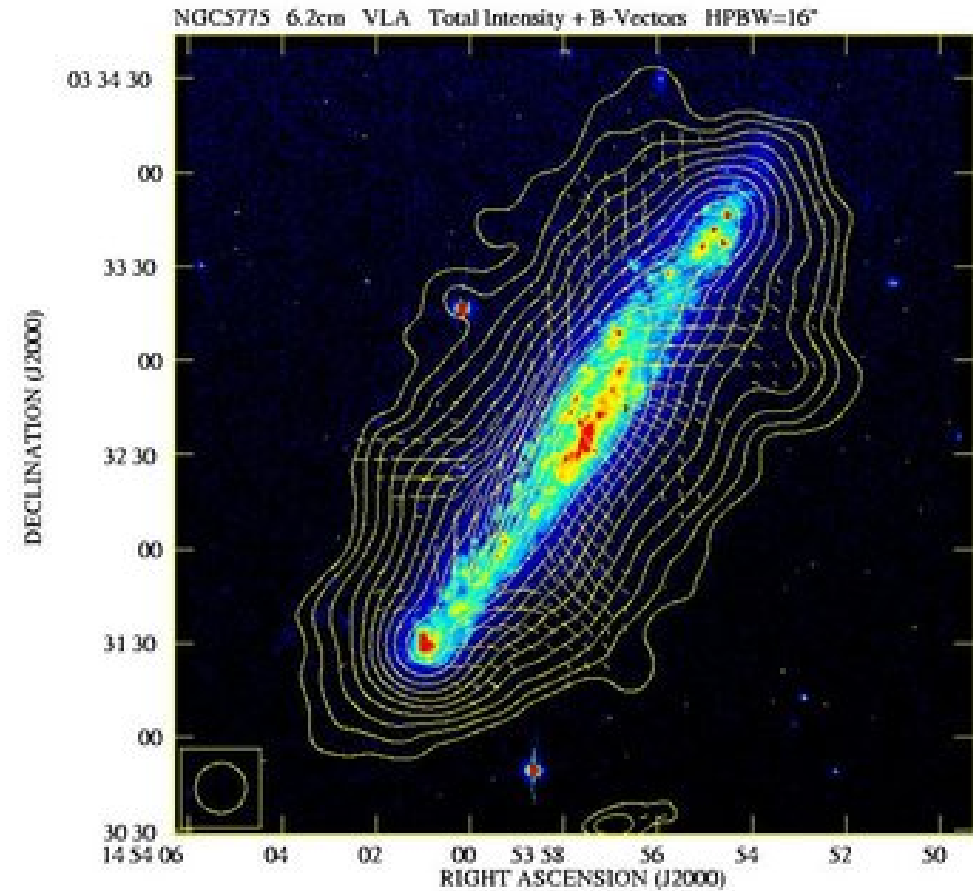
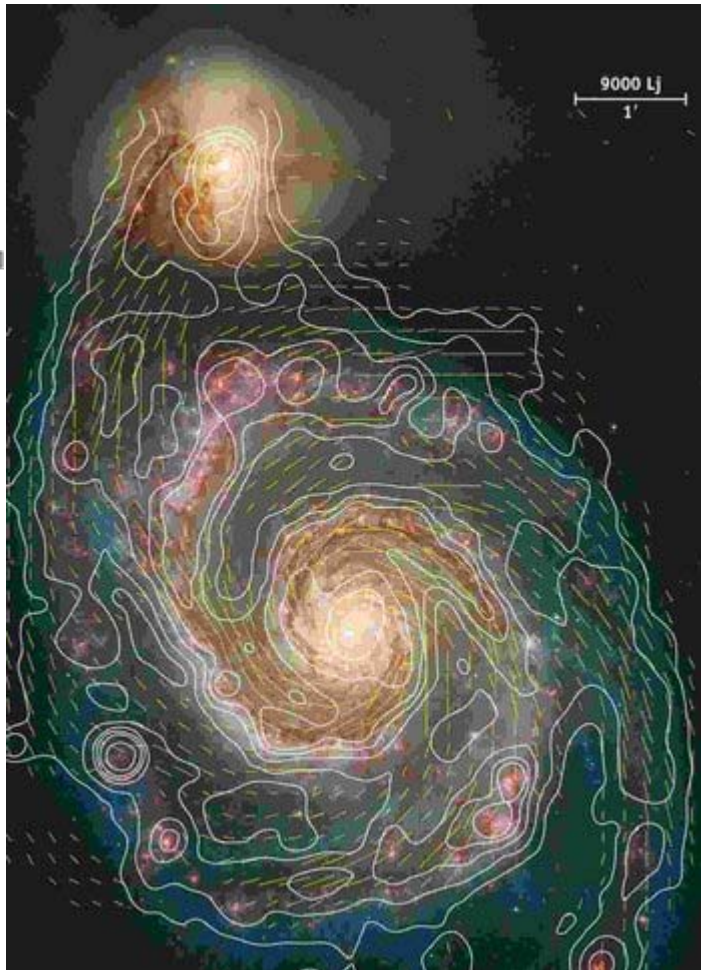


HD 4628 (K4V) 8.4 yrs HD 201091 (K5V) 7.3 yrs HD 321



UZ Lin (binary)
Oláh, Strassmeier & Weber 2002

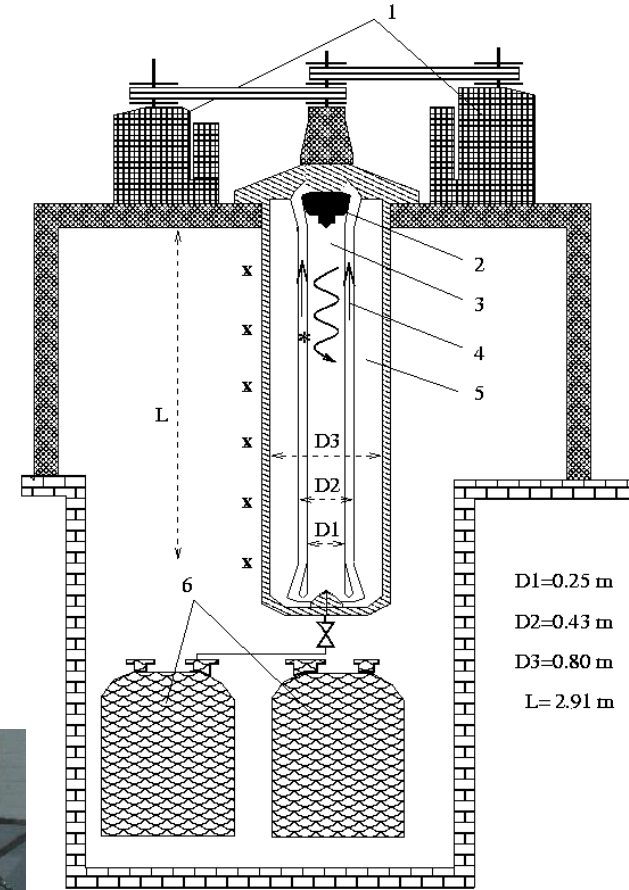
Galaxies



NGC 5775 : Copyright: Cracow Observatory

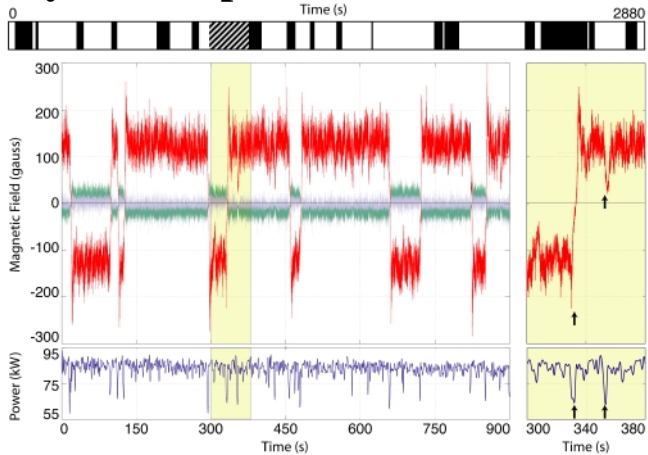
- Spiral galaxy M 51 obtained with the Hubble Space Telescope: MPIfR Bonn ($\sim 15\mu\text{G}$)

Experiments



D1=0.25 m
D2=0.43 m
D3=0.80 m
L=2.91 m

VKS dynamo experiment



Riga dynamo experiment

Maryland 3m sphere!