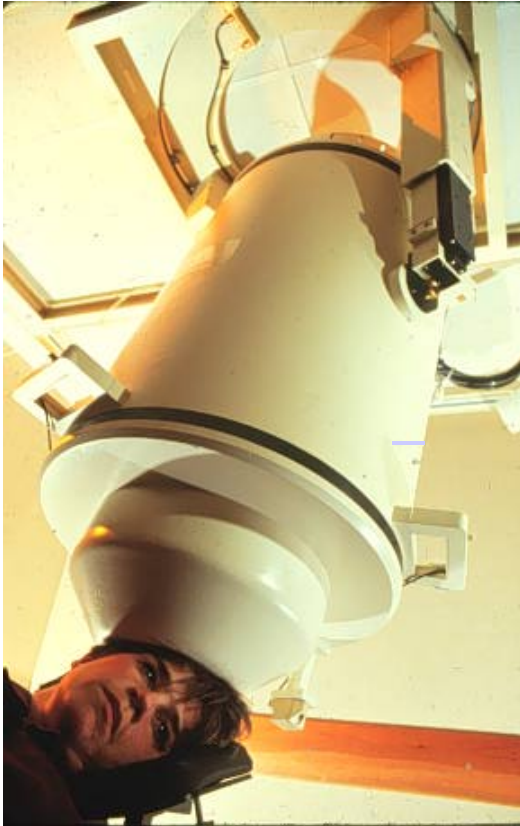
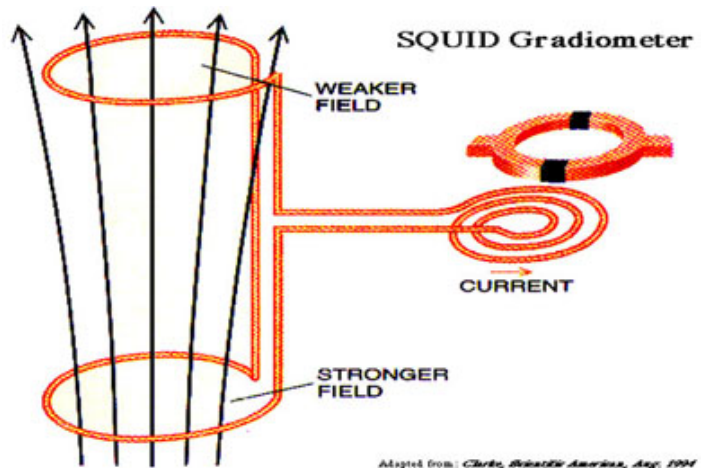
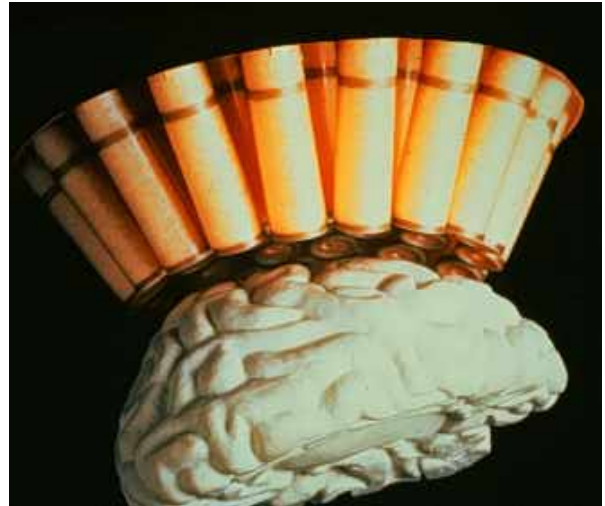
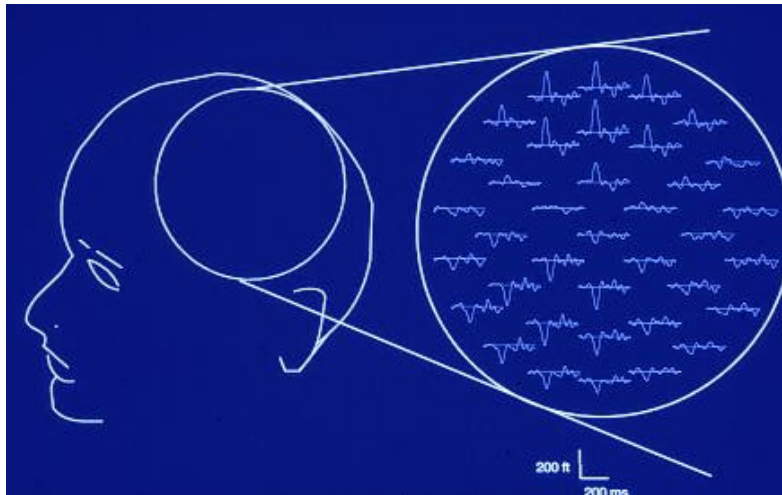


Magnetoencephalography

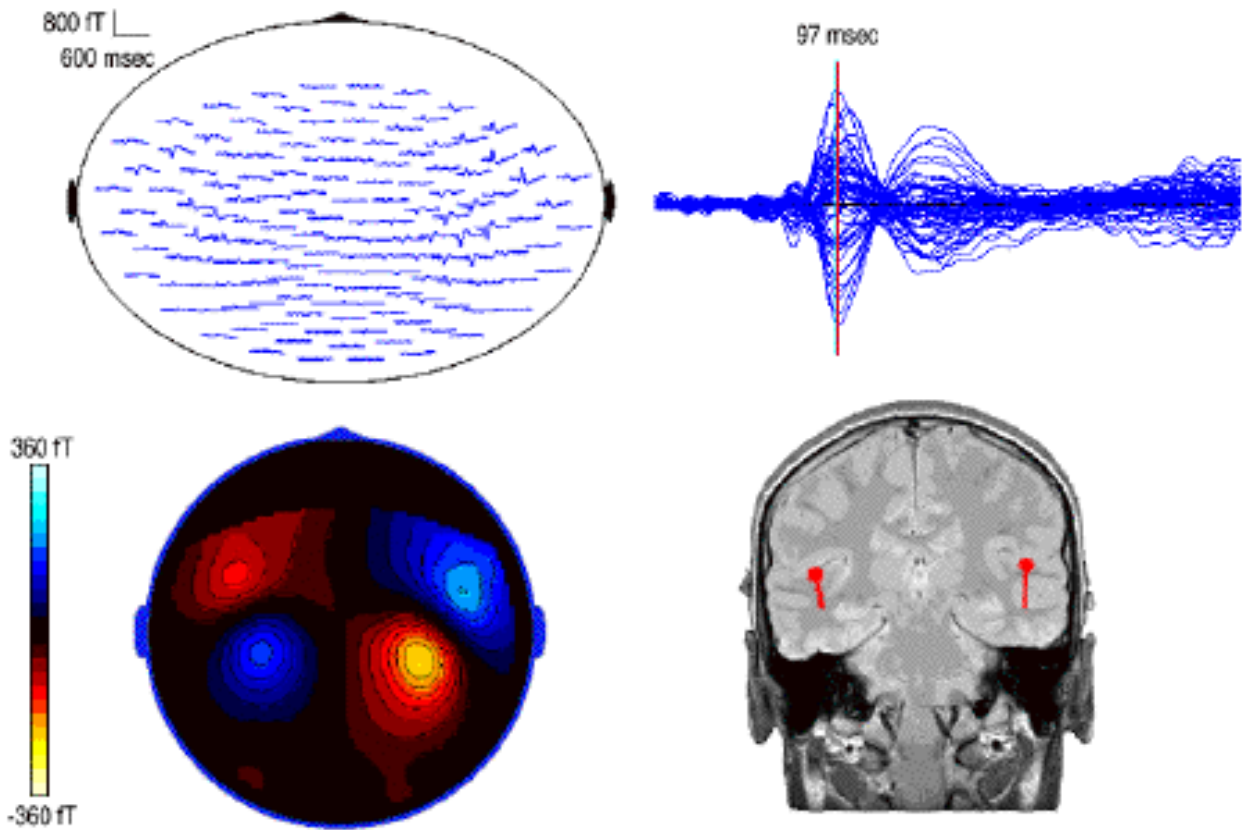


SQUID sensors





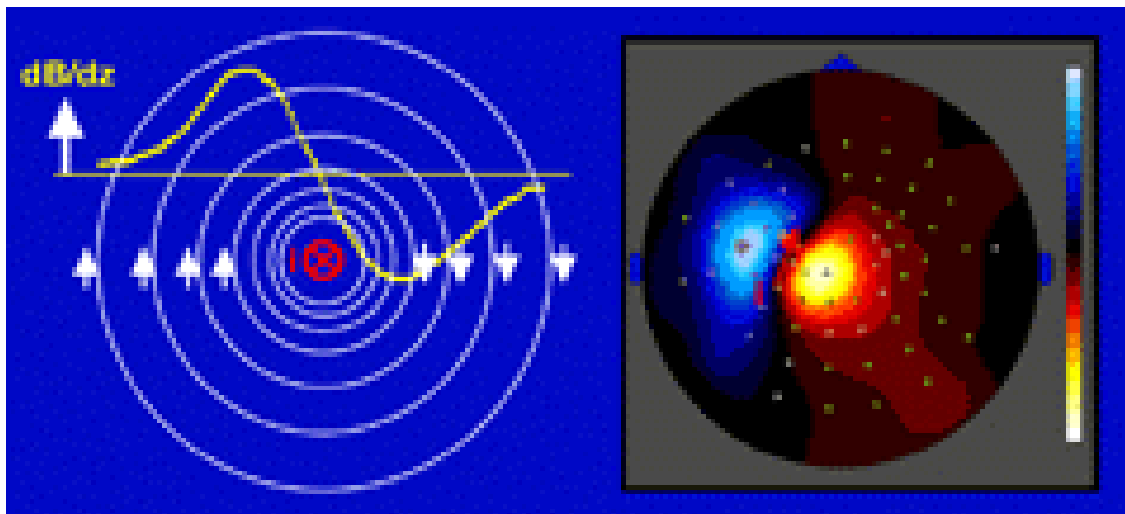
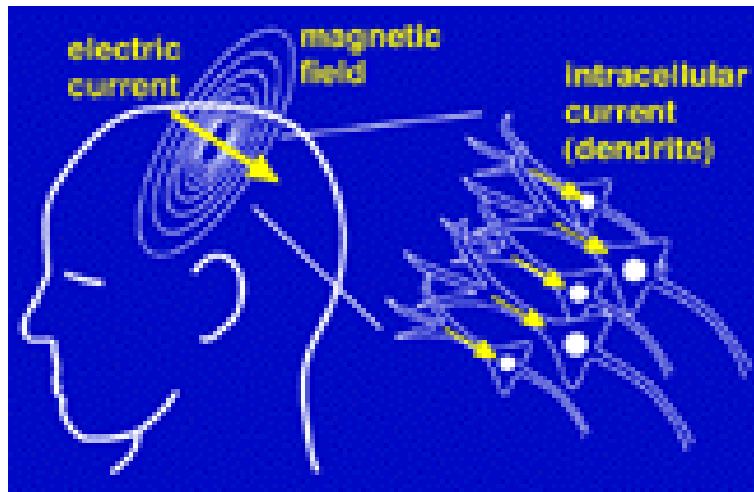
Averaged magnetic fields recorded from the left hemisphere of a subject in response to stimulation of the digits of the right hand. The magnetic field scale is 200 fT!



The upper left panel shows the magnetic field change in each of 143 MEG sensors distributed uniformly about the head. Each time trace is approximately 600 msec in duration and has been displayed on the surface of a flattened head with the nose pointing upward. The data was collected in an unshielded environment and is the result of 100 averages.

The upper right panel shows the same MEG channels overlaid upon each other. The n100 response occurs, in this case, 97 msec after the onset of the tone. The red line is chosen to be the time of interest and the result is shown in the lower left map. The magnetic field distribution in the map clearly shows a signal consisting of two dipolar sources.

After performing the inverse solution, the resultant equivalent current dipoles may be overlaid on the MRI. The lower right image is the result of this fusion, shown from the back of the head. All steps in this process are conveniently carried out using the MEG/4 software package.



MEG Source Detection

The field from a point like source in the brain produces a dipolar pattern in the MEG data. Using an inverse solution, the magnetic field distribution may be described as an equivalent current dipole.