Prolate spheroidals are eigenfunctions of an integral operator

$$W(a) \ni f \longmapsto \int_{-\tau}^{\tau} K(t,\cdot) f(t)\ dt.$$

with a sinc kernel $K(t,z) = \frac{\sin(a(t-z))}{\pi(t-z)}$. Here $W(a)$ is the Paley-Wiener class of signals with bandlimit a. We shall survey some remarkable properties and applications of these functions and indicate a mathod of their stable computation on the interval $[-\tau, \tau]$.