The Njord device at Auroral, University of Tromsø, has been constructed to carry out experiments on instabilities and heating in plasma flows and beams, with relevance to near-Earth space plasmas. For plasma production, Njord combines a 13.56 MHz RF source with a Double Plasma chamber equipped with filaments along the walls. The source is equipped with two coils operated at 0.6A, providing magnetic field of up to 150 G. A third coil (the guide coil) is operated at 0—40 A, to increase plasma density in the main chamber. The first RF plasmas were produced October 2006. For the initial characterization of the plasma, a RF-compensated probe was constructed and tested; measurements were compared with results from a double probe system. Plasmas have been produced applying RF power from 300—600 W, and at pressures from 3x10^-4—1x10^-3 mbar. Axial profiles of density, temperature and plasma potential were obtained down-stream from the middle of the source for a distance of 23 cm, and radial profiles were obtained 15 cm downstream from the edge of the source. In the present paper, we report the construction of the device and the results from the first measurements.

In Norse mythology, Njord is the god of wind, fertile land along the coast, as well as sea travel and fishing. The probe itself has the power to carry the sea in the (Wikipedia).