

II. K-3 型 VLBI 観測システム

II. K-3 VLBI DATA ACQUISITION SYSTEM

A precision Very Long Baseline Interferometer, called K-3 system, had been developed since 1979 and was completed in October 1983. The K-3 system is made up of three major parts, the data acquisition system, the correlation processing system and the data analysis system. In this part of documents, a detailed description of the K-3 data acquisition system is given.

The K-3 data acquisition system is designed so as to be compatible with the Mark III VLBI system of the USA for the purpose of conducting US-Japan joint experiments. The performances of each individual instrument were measured, and according to the performance, the overall system performance was estimated. As a result of that, the K-3 data acquisition system was evaluated to be sensitive enough to detect fringes from weak signals of QSO's and be able to determine the baseline lengths with a accuracy of a few centimeters.

The sensitivity of the K-3 system was confirmed experimentally in the US-Japan test VLBI observations conducted in November 1983 as mentioned in V-1.

In this part of documents, some discussions about the operation of the K-3 data acquisition system and some ideas to reduce the cost of a VLBI observation are also held.