

VLB ARRAY MEMO No. 311

Excerpt taken from letter of Jaap Baars to K. Kellermann, Jan. 16, 1984.

I owe you an answer to your telex inquiry about icing on the 30 m-site in Spain. We have some very fresh experience. Before Christmas there was an ice-storm, which lasted about 2.5 days with very humid wind of some 100 km/h. The building was covered completely (on the side towards the wind), the windows were iced-up (triple glass, obviously well-insulated). The heating of the telescope was on automatic, i.e. 60 % of maximum installed power (we have not more available at present). It was insufficient to keep the structure free of ice, but most of the ice build-up was at or near the edges. One section of the panels, around the azimuth bearing, was out of order - unheated. About 30 cm of ice settled on that part. When the wind changed direction and blew into the reflector (elevation zero) for one night, the heating capacity was insufficient to avoid ice, about 1-2 cm. It melted away after the wind settled down.

In my opinion the need for our deicing system has been well proven. Even if it cannot completely avoid icing under extreme conditions, it appears sufficient for avoiding a dangerous situation for the telescope's survival and for getting on the air afterwards. Without the system the telescope could be weeks out of operation after an icing, before the ice would be melted off. In addition the large chunks of ice, which would likely come down in that process, could seriously harm the telescope.