LONG TERM MONITORING OF AGN WITH THE METSÄHOVI AND SEST TELESCOPES

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The monitoring of extragalactic sources with the Metsähovi radio telescope started in 1980. Since then we have made more than 21000 observations at 12, 22, 37, 77 and 87 GHz. Currently we have 84 sources in our sample which should be observed once a month at 22 and 37 GHz. The sample is limited to declinations above -10 degrees. In most cases our sampling is dense enough to cover all the outbursts at these two frequencies, because our earlier observations have shown the timescales of a typical outburst at 22 and 37 GHz to be from 0.3 to several years.

Our observations with the SEST telescope on La Silla mountain in Chile started in 1988. The observations have been made with a 90 GHz Schottky diode mixer receiver and a bolometer whose center frequency is around 230 GHz. With our SEST observations we both collect information of relatively little observed Southern sources and get high frequency radio data of equatorial sources which can be observed at other frequencies in other observatories.

We have now started a long term project at SEST in observing 51 near equator sources between the declinations -25 and +20 degrees. Of those sources 32 are common with the Metsähovi sample. Although getting a large portion of the Finnish quota spread over the "Swedish" months, i.e. the even months, it is still difficult to obtain a monthly sampling of these sources. This is mostly due to the limit of not observing sources within 50 degrees from the Sun, which will typically cause a 3-month gap in the flux curves. The bolometer is also utilized only during the colder months and thus the sampling will unfortunately be poorest at 230 GHz where the sources will show fastest variations.

Our two projects will give new information on amplitudes and time scales of outbursts from 22 to 230 GHz and are useful e.g. for developing and testing shock models. Also multifrequency studies are easily joined in at least with the Metsähovi telescope. Our data will help to plan VLBI observations at higher frequencies, like 100 GHz, as the source can be observed while in high state and thus visible.

The VLBI maps can also be interpreted better because our database reaches more than 10 years back (at 22 and 37 GHz). From this September a great new effort will be done in participating in the multifrequency campaign related to the Compton gamma ray satellite.

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