FOCUSING OF 3C144 SOURCE RADIATION BY THE SOLAR CORONA

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ABSTRACT. The research of solar corona by the compact cosmic source radiation was made on URAN-4 radio telescope. In the period from June 6 to June 20 2012 the flow of Crab nebula was measured on the 20 MHz and 25 MHz frequencies. During the eclipse we observe the great increase of 3C144 flow, which is compare with the flow of 3C461 source. Data and results of measurement analysis is presented.

Key words: radio source, solar corona.

Radio telescope URAN-4 is work in frequency range 10 to 30 MHz. Its antenna is representing the phased array with two polarizations. Its effective square is 5360 m^2 (Galanin et al., 1989). In 2010 there was perform the modernization of equipment and digital radiometer was created. In the period from June 6 to June 20 2012 on the radio telescope there was made an experiment of solar corona study by means of compact cosmic source. The observations were made in the period of solar activity maximum. We has study the transition region of solar corona with 2 to 15 solar radii, in which the solar wind is speedup.

In these days the Crab nebula 3C144 flow was measured on two frequencies 20 and 25 MHz. As a supporting source we take the CasA 3C461. Figure 1 show 3C461 to 3C144 flow ratio plots for two frequencies and two polarizations.

It's seen from this data that 3C144 flow is change from minimum, diffused, in the period from June7 to June 9, up to maximum from June 12 to June 18. In the period of maximum eclipse phase on June 15 the flow of 3C144 exceed near 4 times the flow of supporting source.

Figure 2 show records of sources 3C144, 3C274, 3C405 and 3C461 which were made from June 14 to June 15 2012.

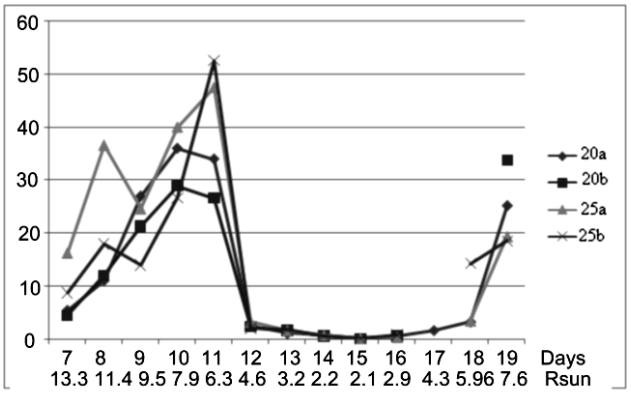
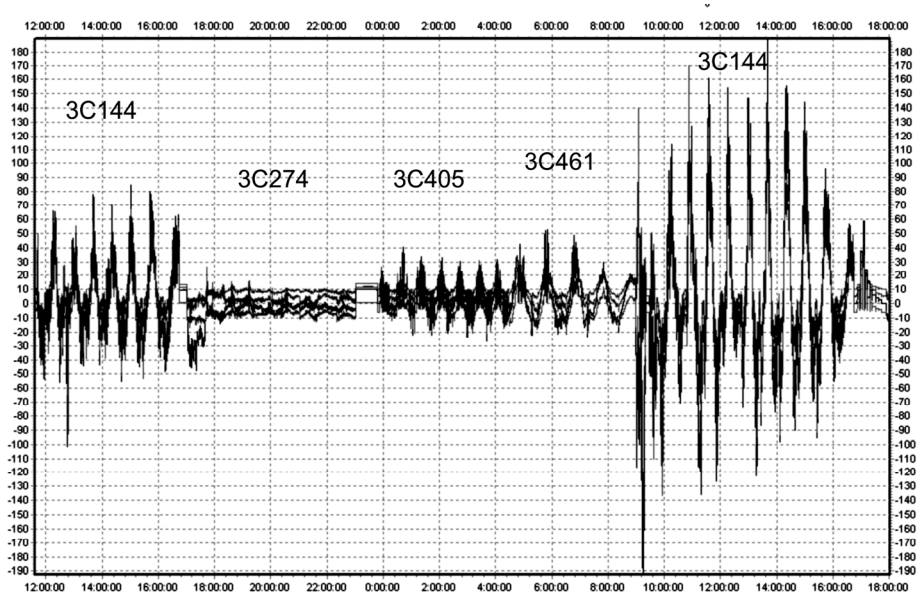


Figure 1: Ratio of 3C461 to 3C144 flow for two frequencies and two polarizations.

References

Galanin V.V. et al.: 1989, *Kinematika i fizika nebesnyh tel*, **5**, 5, 87.



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