CURRENT STATUS OF RT-32 (Zolochiv, Ukraine).

Technical and Science Aspects

EVN TOG meeting, Feb. 08, 2022

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RT-32 can carry out observations in the 4-6.8 GHz and 20-26 GHz bands simultaneously

Precise time and frequency system based on PTP-4100 server, cesium frequency standard 5071A-C001 and GNSS receivers

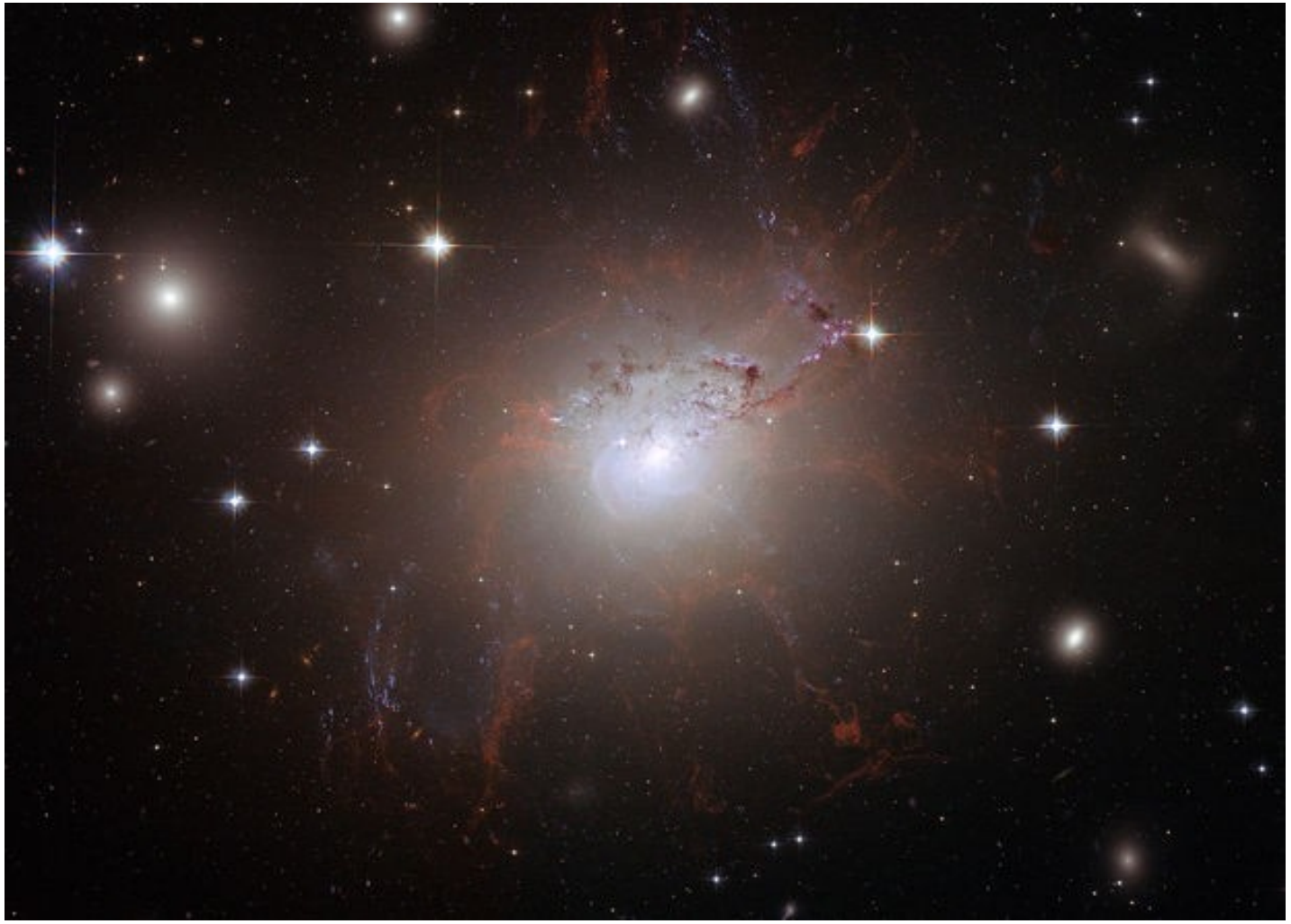
2022

2021

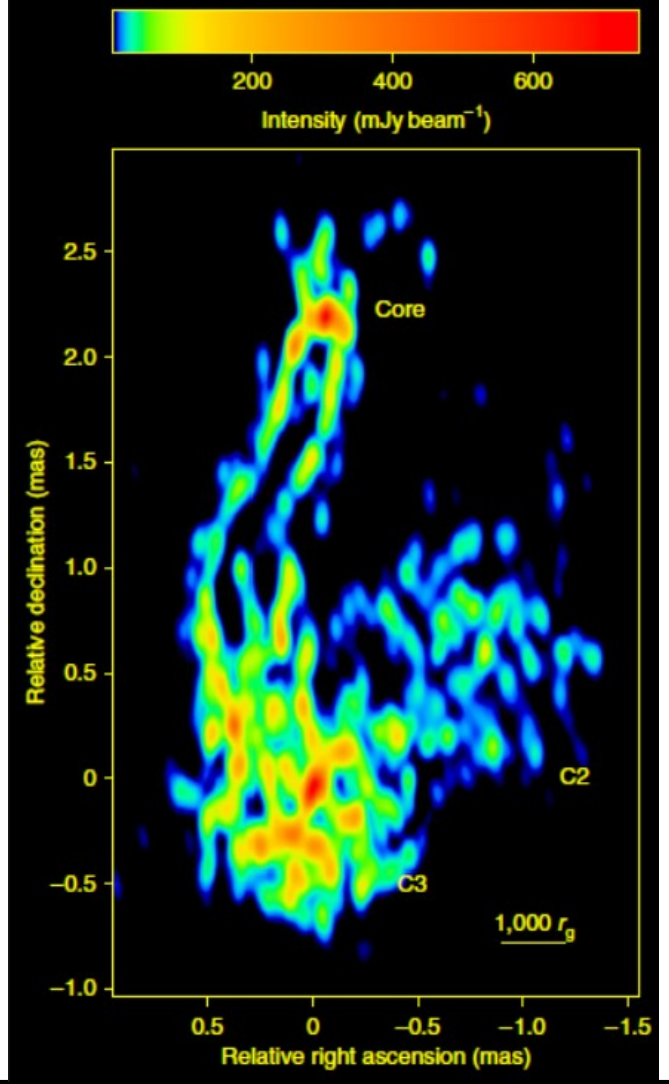
New LAN Switchers and 10 MHz and PPS Signals Splitters

Storage data center (304 TB) with new routers and fiber links (10 Gb/s)

New LAN Switcher and Wi-Fi Router in the Conference Hall

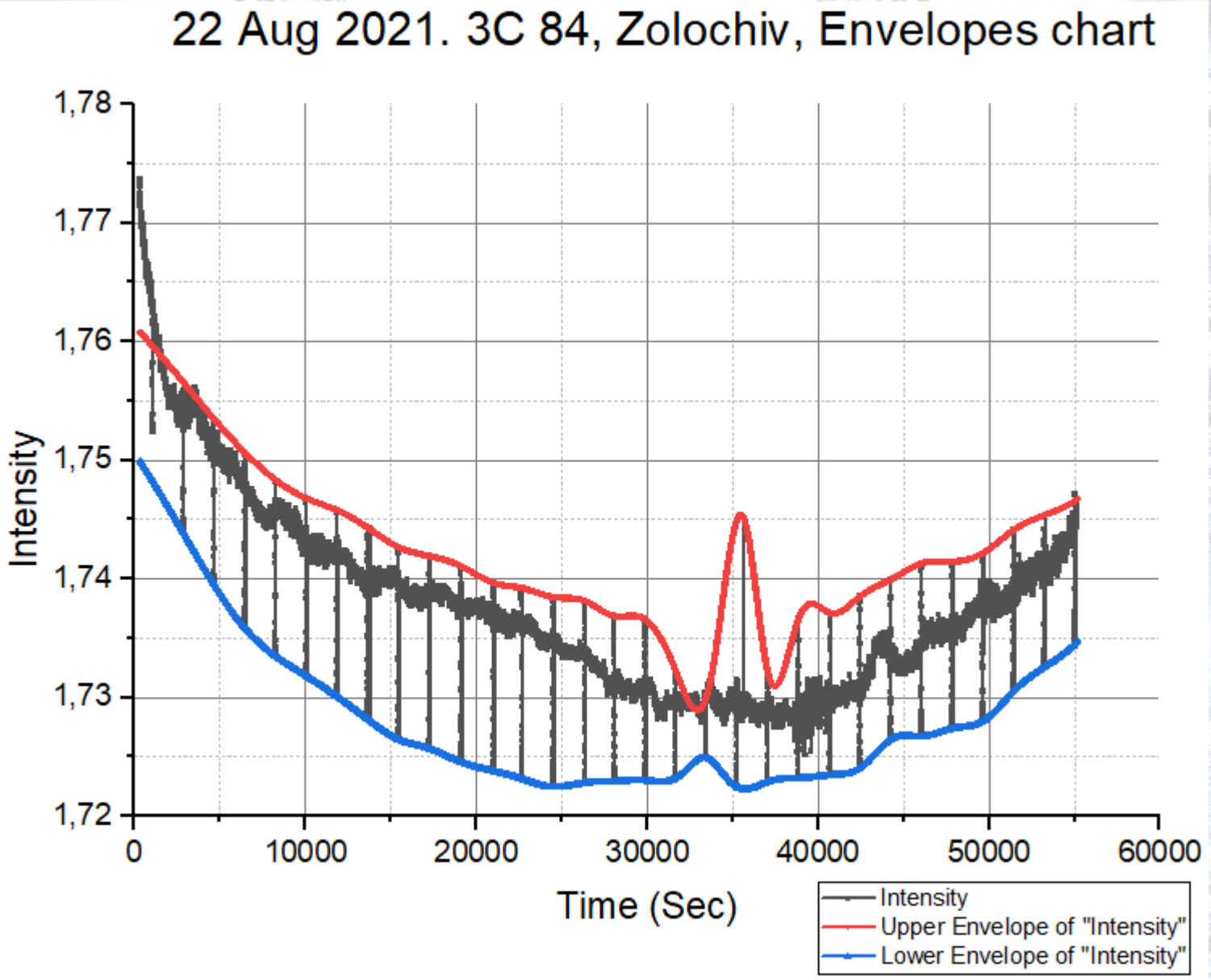


Hubble Space Telescope Image of NGC 1275 (3C 84)

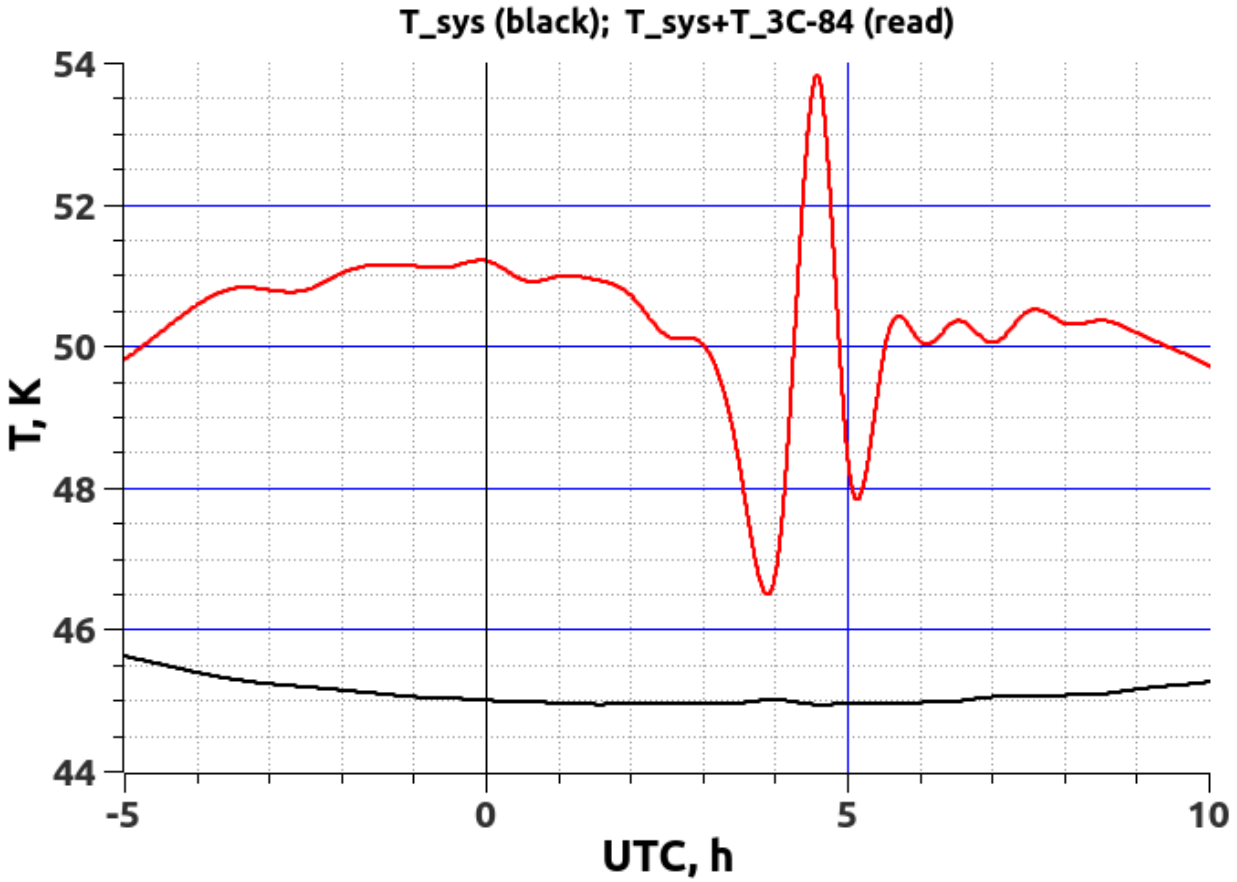


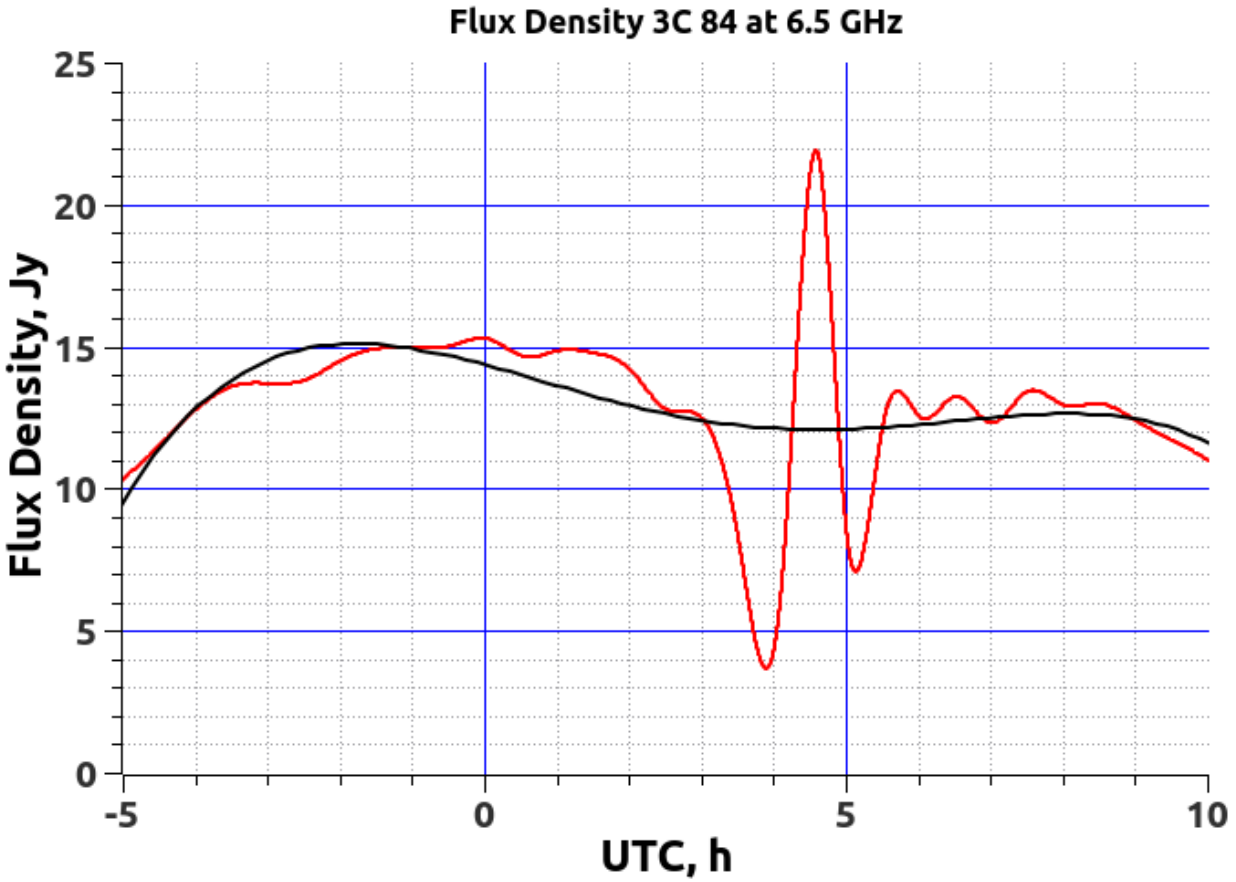
Map of the Central Part of 3C 84 (RadioAstron data)
G. Giovannini, T. Savolainen, M. Orienti et al A wide and collimated radio jet in 3C84 on the scale of a few hundred gravitational radii Nature astronomy Letters https://doi.org/10.1038/s41550-018-0431-2

Investigation of the “Perseus-A” radio galaxy at C band

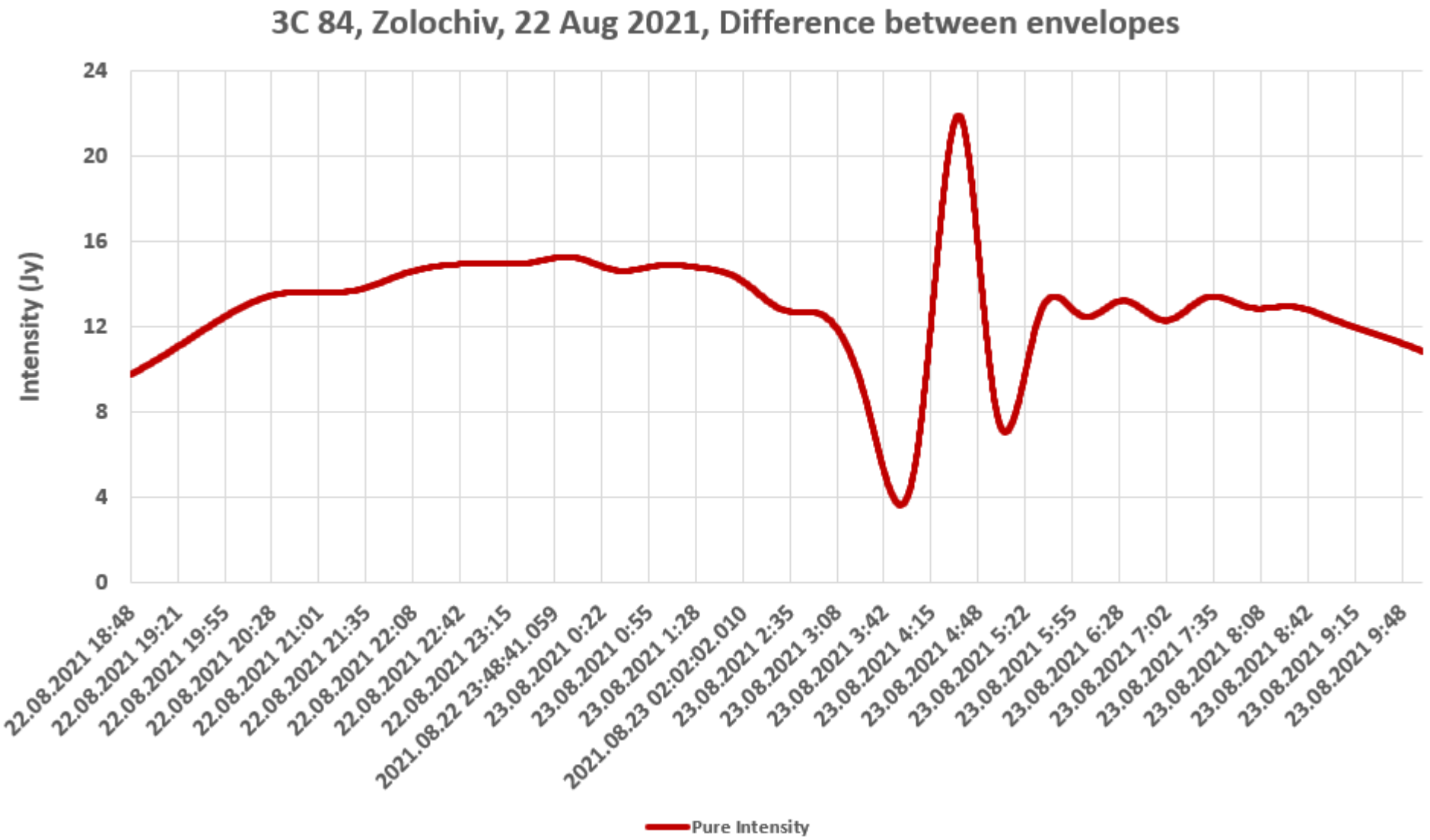


Study of the Intro-Day Variations of 3C 84 (Perseus-A)

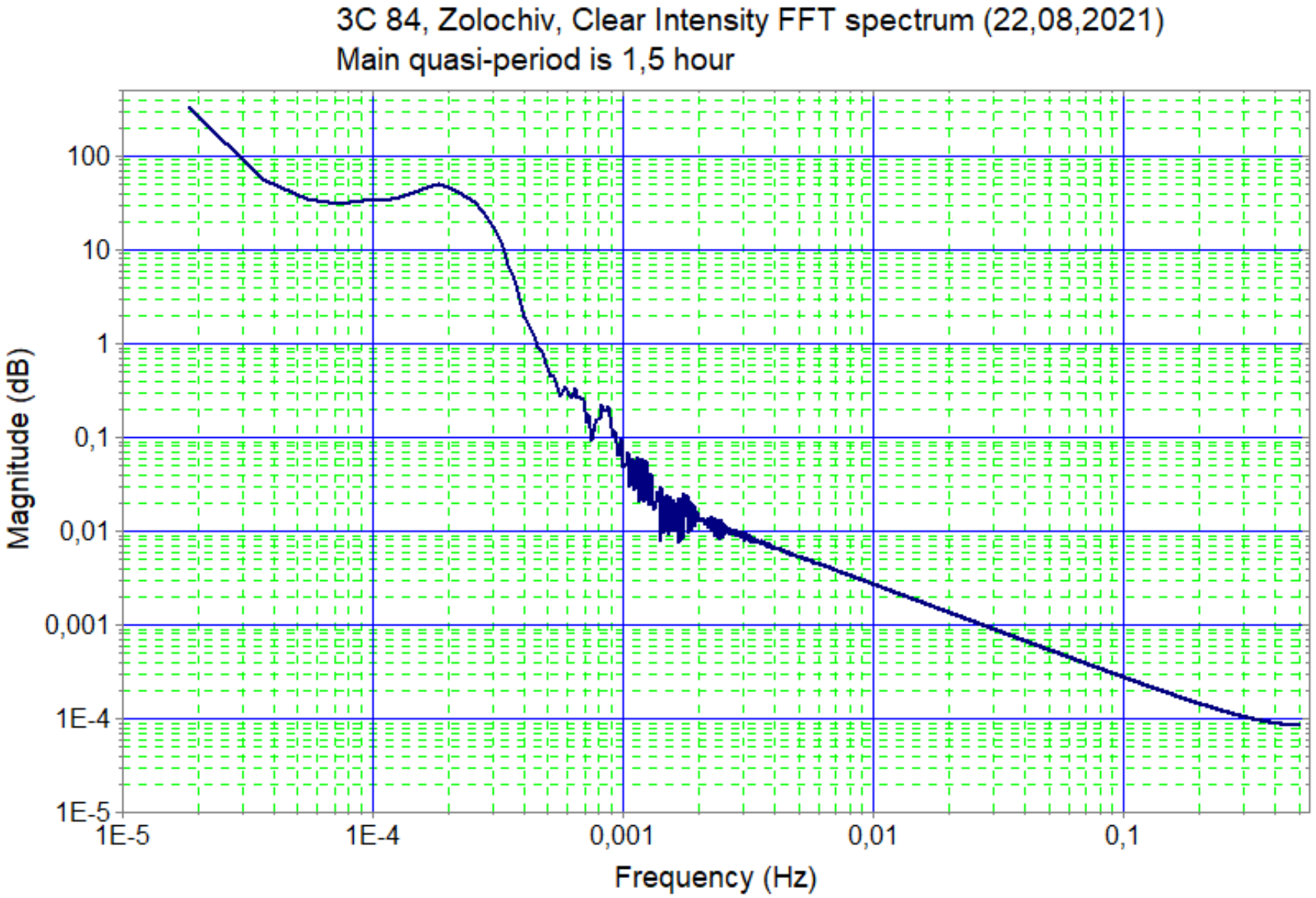




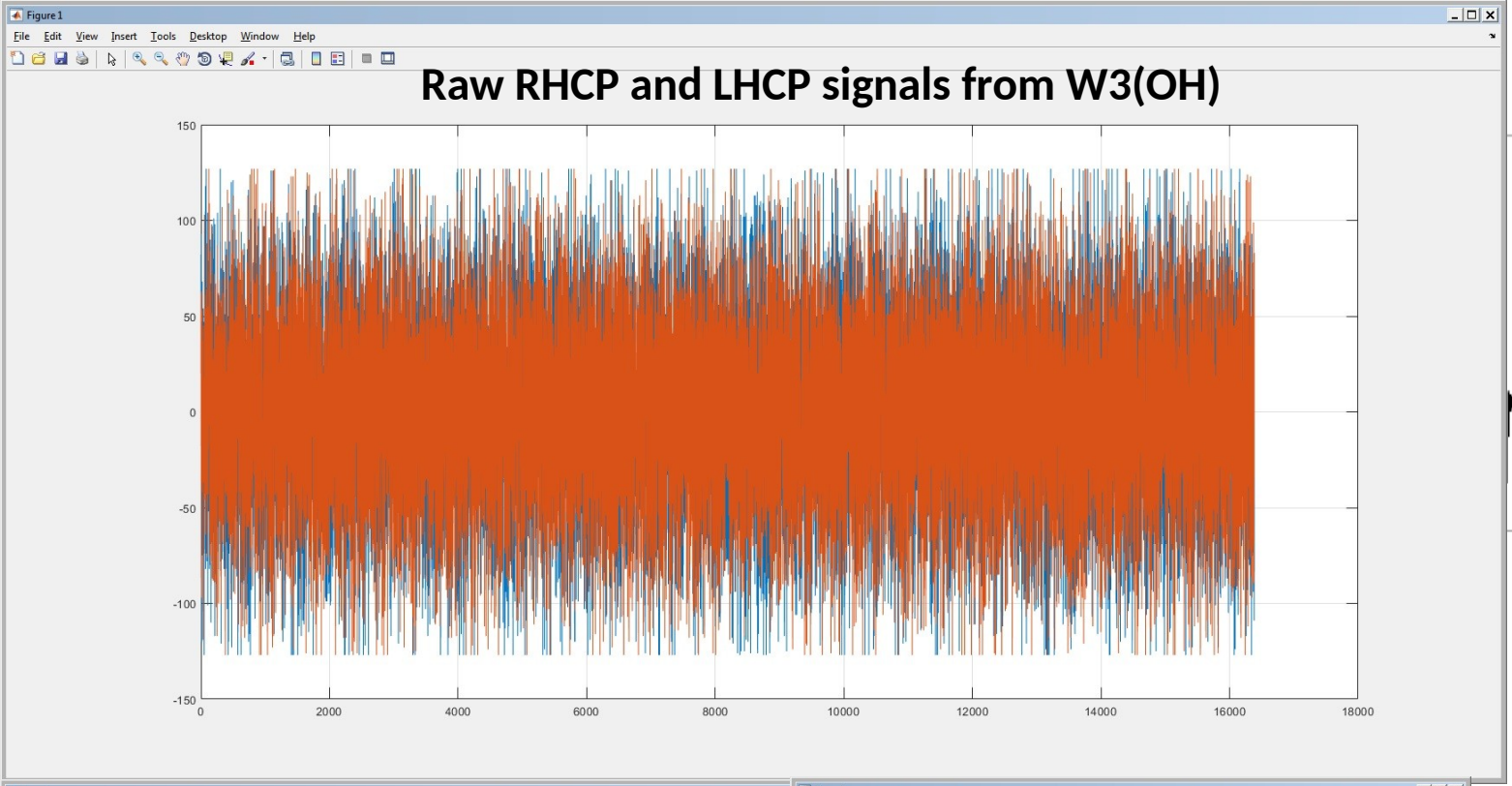
Flux Density of the 3C 84 at 6.6480 GHz



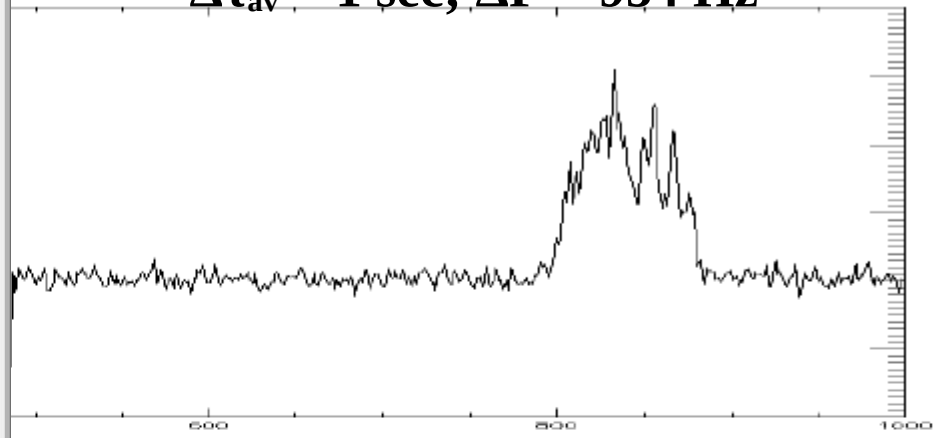
Average Intro-Day Variation Spectrum of Perseus-A (3C 84) Radio Galaxy



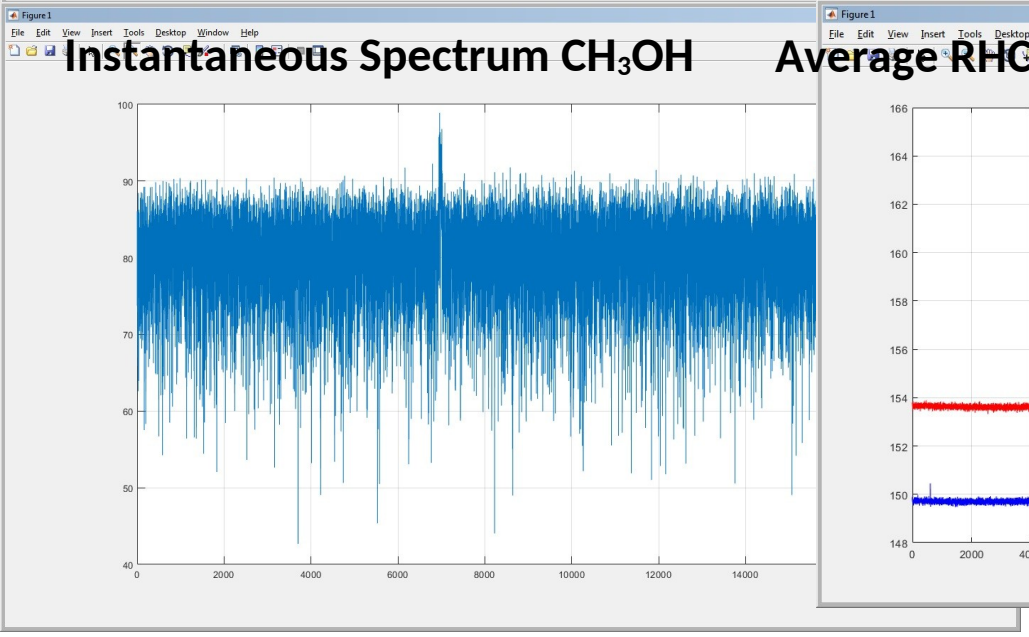
Raw RHCP and LHCP signals from W3(OH)



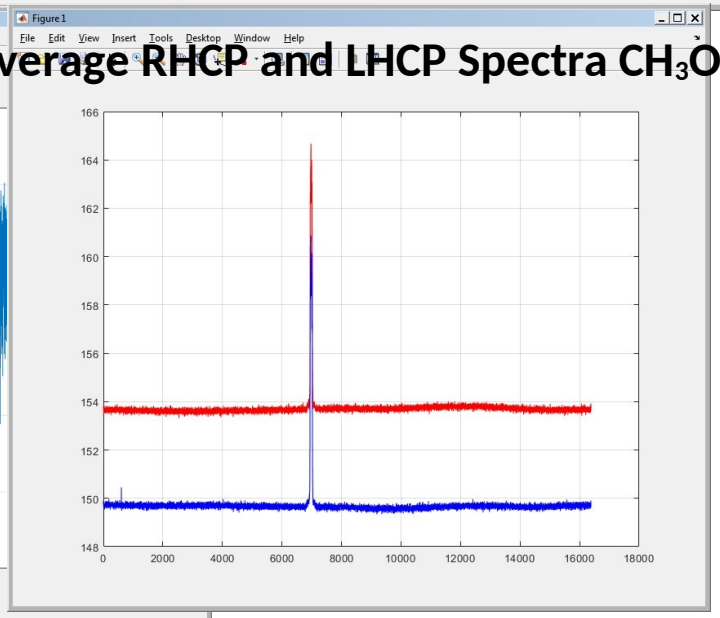
$\Delta\tau_{av} \approx 1$ sec; $\Delta F = 954$ Hz

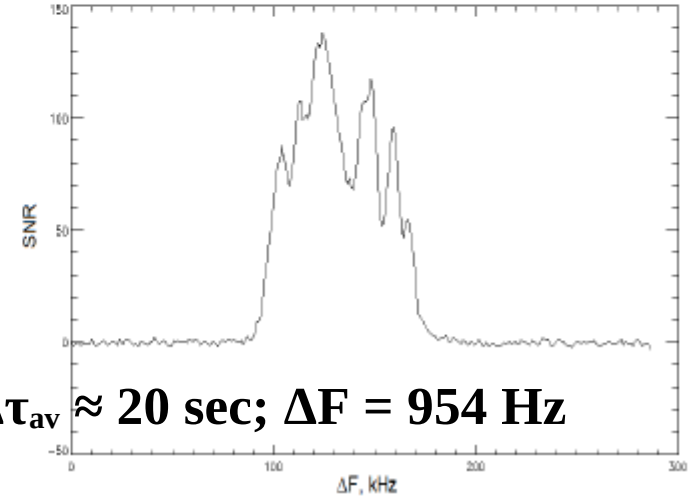


Instantaneous Spectrum CH_3OH



Average RHCP and LHCP Spectra CH_3OH





$\Delta\tau_{av} \approx 20$ sec; $\Delta F = 954$ Hz

Registration of CH_3OH line at 6.669 GHz in Wave-Form (from the left) and Spectrum modes (from the right) by RT-32 Zolochiv

CONCLUSIONS

1) The RT-32 Zolochiv began to work successfully in the C and K bands.

2) It can operate both autonomously and as part of an international network of radio telescopes.

3) It is planned to install the X band in addition to the C and K bands for their simultaneous operation in the next year.

4) Now RT-32 is successfully investigating Galactic masers (OH, CH_3OH, H_2O), active galactic nuclei, the lower corona of the Sun, scintillation of radio sources in interplanetary and interstellar plasma in two (C and K) bands .

5) Also RT-32 can be used for observations in the EVN network

6) At present, the RT-32 is used to study active galactic nuclei .

Thank you for your attention !!!!