

Jupiter: Project 24. Celebrating IYA with the King of Planets

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Abstract

PARTNeR (Proyecto Académico con el Radio Telescopio de NASA en Robledo, Academic Project with NASA's Radio Telescope at Robledo) is a radio astronomy educational program that allows high school and undergraduate students to control a 34-meter radio telescope and conduct radio astronomical observations via the Internet. High School teachers joining the project take a course to learn about the science of radio astronomy and how to use the antenna in their classrooms. Also, teachers are provided with some learning activities they can do with their students and focused on the implementation of the project within an interdisciplinary framework.

Under the guidance of NASA's radio astronomers we celebrate the International Year of Astronomy undertaking the Jupiter: Project 24. This campaign was over 24 hours of continuous observation of Jupiter using all three NASA's Deep Space Network complexes around the world. The DSN is a global network of antennas, with three facilities: one in California (USA), another near Madrid (Spain) and one in Canberra (Australia). Two of the radio telescopes were operated by students organized by educational programs: GAVRT in California and PARTNeR in Madrid. The Jupiter: Project 24 observations were broadcasted to the world in real time via the Internet.

The radiation at radio wavelengths coming from Jupiter is thermal emission of the planet plus the non-thermal emission of high energy electrons trapped in its surrounding magnetosphere. Due to a misalignment of rotation and magnetic axes of Jupiter, the non-thermal intensity varies with the rotation of the planet. The rotation period is 9.925 hours so we observed almost two and a half rotations. Our aim was to seek non-thermal variability caused by other causes unrelated to the Jovian magnetic field,

such as variations in solar activity or possible changes induced in the planet for the great impact observed by an amateur astronomer near Canberra in July 2009.

In this contribution, we will present a summary of activities and some preliminary results from the continuum flux density monitoring.



Figure 1: Jupiter: Project 24 logo.