

Giant pipe organ in the solar atmosphere (Forwarded)

Source: <http://newsgroups.derkeiler.com/Archive/Sci/sci.space.news/2007-04/msg00102.html>

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 - *Date:* Tue, 24 Apr 2007 22:14:10 -0400
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London, U.K.

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From 16 to 20 April, Professor von Fay–Siebenburgen or Dr Taroyan can be contacted via the NAM press office (see above).

PRESS INFORMATION NOTE: RAS PN 07/28 (NAM 24)

EMBARGOED FOR 00:01 BST, THURSDAY 19 APRIL 2007

GIANT PIPE ORGAN IN THE SOLAR ATMOSPHERE

Astronomers have found that the atmosphere of the Sun plays a kind of heavenly music. The magnetic field in the outer regions (the corona) of our nearest star forms loops that carry waves and behave rather like a musical instrument. In a talk on Thursday 19 April at the Royal Astronomical Society National Astronomy Meeting in Preston, Dr Youra Taroyan and Professor Robert von Fay–Siebenburgen of the Solar Physics and Space Plasma Research Centre (SP2RC), University of Sheffield will explain the origin of these magnetic sound waves. They will present a series of animations and sound files that demonstrate how these dramatic events appear and fade away rapidly.

In recent years scientists have worked hard to better explain and predict the dynamic behaviour of the Sun. For example, missions like STEREO and Hinode watch as material is ejected towards the Earth, events which are controlled by the solar magnetic field.

In their research, led by Professor von Fay–Siebenburgen, SP2RC scientists combined observations with new theoretical models to study the magnetic sound waves that are set up along loops in the corona. "These loops can be up to 100 million kilometres long and guide waves and oscillations in a similar way to a pipe organ," says Dr Taroyan

The acoustic waves can be extremely powerful and reach amplitudes of tens of kilometres per second. Professor von Fay–Siebenburgen adds, "we found that the waves are often generated at the base of the magnetic pipes by enormous explosions known as micro–flares. These release energy equivalent to millions of hydrogen bombs. After each micro–flare, sound booms are rapidly excited inside the magnetic pipes before decaying in less than an hour and dissipating in the very hot solar corona."

NOTES FOR EDITORS

The 2007 RAS National Astronomy Meeting is hosted by the University of Central Lancashire. It is sponsored by the Royal Astronomical Society and the UK Science and Technology Facilities Council.

This year the NAM is being held together with the UK Solar Physics (UKSP) and Magnetosphere, Ionosphere and Solar–Terrestrial (MIST) spring meetings. 2007 is International Heliophysical Year.

IMAGES:

Images, animations and sound files can be found at
<http://www.robertus.staff.shef.ac.uk/movies/uksp-nam2007/>

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