STATE AGENCY ON SCIENCE, INNOVATION
AND INFORMATION OF UKRAINE
RESEARCH INSTITUTE “NIKOLAEV ASTRONOMICAL OBSERVATORY”

ASTRONOMICAL RESEARCH: FROM NEAR-EARTH SPACE TO THE GALAXY

International Conference

ABSTRACT BOOK

September 26-29, 2011,
Mykolaiv, Ukraine

ANOMALIES EMI SYNCHRONOUS WITH THE PASSAGE OF SEISMIC WAVES FROM EARTHQUAKES

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As a result of a joint analysis of sensor data of Electromagnetic Impulse (EMI), the Fedchenko clock and amplitude VLF transmitter DCF-77 it was determined that the bursts of electromagnetic field had been observed with the arrival of seismic waves from some distant earthquakes. It is possible that the micro-discharge processes during the passage of seismic waves can be the reason of EMI. Such processes may be the reason of methane explosions. The described phenomenon can be used, for example, to take necessary protective measures in the mountain industry.

STRUCTURE OF THE NEAR NUCLEUS REGION IN COMET 81P/WILD 2

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Dust and gas jets were first detected in comet 1P/Halley (A'Hearn et al, Nature 324, 649, 1986). Then these structures were also observed in comet C/1996 B2 Hyakutake, C/1995 O1 Hale-Bopp, 109P/Swifta-Tuttle (were found in long-slit spectra), C/2004 Q2 (Machholz), 19P/Borelly and 81R/Vilda on board the spacecraft Deep Space in 2001 and Stardast in 2004, the comet C/2005 E2 (McNaught) in 2009 (Picazzio, Churyumov et al. Abstract book. IAU XXVII General Assembly. 3-14 Aug. 2009. p.62).

High-collimated jets observed in comet 81P/Wild 2 (20 jets) and in comets 103P/Hartley (dozens of thin jets), on both light and dark areas and even on the terminator. Jet comet Hartley consisted of carbon dioxide (CO_2), the powerful flow of the sublimate pushed dust matter and different particles of frozen gases, including ice of H_2O. This is the basic physical mechanism of formation of jets in the comets.

Space mission Stardast investigated short-period comet 81P/Wild 2 on January 2, 2004 and captured numerous samples of cometary and interstellar dust particles which were delivered to Earth on January 15,