

Report

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SOLARI REPORT "FUTURE SCIENCE"

Ulrike Granögger

Muons and Neutrinos

Excitement and Excitation

Credits and Links for Further Study

Scan Pyramids Project

<http://www.scanpyramids.org>

Nature Magazine

Article on dedected Pyramid chamber

<https://www.nature.com/news/cosmic-ray-particles-reveal-secret-chamber-in-egypt-s-great-pyramid-1.22939>

Heritage Innovation Preservation – Press Release

http://www.hip.institute/press/HIP_INSTITUTE_CP5_EN.pdf

Daily Mail Photo series

<http://www.dailymail.co.uk/sciencetech/article-3575800/What-s-REALLY-inside-pyramid-3D-images-created-using-cosmic-particles-hidden-tunnels-inside-mysterious-structure.html>

Oleg Khavroshkin – "Seismic noise of Snowfru (Dahshru) pyramid: the cosmos component"

<http://at.yorku.ca/c/a/o/n/14.htm>

Muon Screening of Eiger Glacier, Switzerland

<https://www.ingenieur.de/technik/forschung/mit-kosmischen-teilchen-eigergletscher-durchleuchten/>

Monitoring Carbon Storage with Muons

<https://www.sheffield.ac.uk/news/nr/muon-detector-reduce-carbon-emissions-1.380076>

Fukushima Reactor Scan using Muons

<https://www.extremetech.com/extreme/201706-muon-scans-confirm-complete-reactor-meltdown-at-fukushima-reactor-1>

Tomographic Imaging Border Control, Truck Scanning

<https://decisionsciences.com/rd-100-magazine-rapid-scanning-for-radiological-threats/>

https://commons.wikimedia.org/wiki/Category:Muon_physics#/media/File:Muon_Radiography.gif

<https://decisionsciences.com/our-product/#faq>

Muon Surveillance

<https://www.nature.com/articles/422277a>

Portable Muon Detector

<http://news.mit.edu/2017/handheld-muon-detector-1121>

Muon Art and Music

<http://cosmicray.com.au/building-a-cosmic-ray-detector/cosmic-array>

<https://www.sacredresonance.com.au>

<https://youtu.be/643JHaWB4R0>

<https://youtu.be/imXH1vcGlQI>

Compact Muon Solenoid

<https://home.cern/about/experiments/cms>

Video: "The CMS Detector" used with permission:

<https://youtu.be/zk-nFWMaw6U>

Lake Baikal Neutrino Observatory

https://astro.desy.de/neutrino_astronomy/previous_projects/baikal/index_eng.html

Antares in Mediterranean Sea

<http://antares.in2p3.fr/Overview/index.html>

http://antares.in2p3.fr/Gallery/3D/antares_pub.jpeg

Pierre Auger Observatory

<https://www.auger.org>

<https://www.sciencedirect.com/science/article/pii/S0168900215008086#f0005>

Super-Kamiokande

<http://www-sk.icrr.u-tokyo.ac.jp/sk/index-e.html>
<http://www.amusingplanet.com/2015/07/the-surreal-world-of-neutrino-detectors.html>

Icecube Observatory in Antarctica

<http://icecube.wisc.edu/about/overview>
<http://icecube.wisc.edu/gallery/index>

Video used with permission. Produced by IFIC, Directed by Javier Diez: <https://vimeo.com/114361247>

KM3NeT – Qubic Kilometer Neutrino Telescope

<http://www.km3net.org>

Laguna Neutrino Detector

<http://212.71.251.65/aspera//images/stories/Mag7/brochurelbno3volets.pdf>

EUSO-SPB Extreme Universe Space Observatory Super Pressure Balloon

http://astroserve.mines.edu/euso_spb/2017-spb.html

JEM-EUSO Extreme Universe Space Observatory

<http://ncbj.u.lodz.pl/english/euso/index.html>

LIGO – Gravitational Waves and Neutrino Research

www.ligo.org/science/Publication-S5LV_ANTARES/

Gravitational Wave Antenna in Space

www.lisamission.org/?q=articles/context-2030/gravitational-wave-science-2030

<http://sci.esa.int/lisa/30469-searching-for-gravitational-waves-with-lisa/>

Communication with Neutrinos

<https://phys.org/news/2012-03-wireless-message-neutrinos.html>

<https://arxiv.org/abs/1203.2847>

<https://arxiv.org/abs/0805.2429>

Moon as Neutrino Detector

<https://www.researchgate.net/project/Moon-as-a-Giant-Detector-for-Neutrino-Streams-from-Pulsars-OB-Khavroshkin-VV-Tsyplakov-Institute-of-Physics-of-the-Earth-Russian-Academy-of-Sciences-khavolemailru>

<https://www.newscientist.com/article/dn17561-moon-may-reveal-elusive-cosmic-neutrinos/>

Neutrino Search with Multiple Telescopes

<https://arxiv.org/abs/1110.5370>

Square Kilometer Array

<https://www.skatelescope.org>

<http://www.astronomy.swin.edu.au/production/medialibrary/>
*SKA animation used with permission courtesy Swinburne
Astronomy Productions*

<https://youtu.be/8BBoDw2qVD0>

<https://web.archive.org/web/20180616055505/http://www.oerc.ox.ac.uk/news/big-data-space-and-sound>

Shroud of Turin

<http://www.shroud.com>