Resources, Websites for “Electrostatics and Space”

**Is Space Empty?:**

How to Build a Cloud Chamber

<https://video.search.yahoo.com/yhs/search;_ylt=AwrC5rJgZdtZQ38AIak0nIlQ;_ylu=X3oDMTBncGdyMzQ0BHNlYwNzZWFyY2gEdnRpZAM-;_ylc=X1MDMTM1MTE5NTcwMARfcgMyBGFjdG4DY2xrBGJjawNhc21rYjAxY3JoN2NjJTI2YiUzRDMlMjZzJTNEcTYEY3NyY3B2aWQDRk10SVBERXdMakd1V29zQVdiaWRqQUtXTWpZd01RQUFBQUQzbjZrUQRmcgN5aHMtaXRtLTAwMQRmcjIDc2EtZ3AEZ3ByaWQDWHFMRlc4REhRdDIzS2pfcjk2OE1qQQRtdGVzdGlkA251bGwEbl9yc2x0AzYwBG5fc3VnZwMxMARvcmlnaW4DdmlkZW8uc2VhcmNoLnlhaG9vLmNvbQRwb3MDMgRwcXN0cgNjbG91ZCBjaGFtYmVyBHBxc3RybAMxMwRxc3RybAMyOARxdWVyeQNob3cgdG8gYnVpbGQgYSBjbG91ZCBjaGFtYmVyBHRfc3RtcAMxNTA3NTUwOTM4BHZ0ZXN0aWQDbnVsbA--?gprid=XqLFW8DHQt23Kj_r968MjA&pvid=FMtIPDEwLjGuWosAWbidjAKWMjYwMQAAAAD3n6kQ&p=how+to+build+a+cloud+chamber&ei=UTF-8&fr2=p%3As%2Cv%3Av%2Cm%3Asa&fr=yhs-itm-001&hsimp=yhs-001&hspart=itm&type=mnn_frmr_17_37#id=1&vid=16000be7ae2e14465947583b5fd626c3&action=view>

How to Make a Cloud Chamber (In a plastic cup)

<https://video.search.yahoo.com/yhs/search;_ylt=A0LEVvVSZdtZ8isAXRwPxQt.?p=cloud+chamber+in+a+jar&fr=yhs-itm-001&fr2=piv-web&hspart=itm&hsimp=yhs-001&type=mnn_frmr_17_37#id=3&vid=8d29be9080a0ccbcdbc4b8c0461368cf&action=view>

Particles in the Mist

<http://physicsopenlab.org/2017/05/18/particles-in-the-mist/>

Secrets of the Sun, NOVA video

<https://www.youtube.com/watch?v=byAXokzLE_4>

Solar and Heliospheric Observatory:

<https://sohowww.nascom.nasa.gov/>

Solar Dynamics Observatory:
<https://sdo.gsfc.nasa.gov/>

**Aurora:**

Aurora Tutorial - Dawn of the North

<http://sprg.ssl.berkeley.edu/aurora_rocket/aurora/>

Aurora Tutorial Analogs - Television in the Sky - Comparing Aurora to Cathode Ray Tubes

<http://sprg.ssl.berkeley.edu/aurora_rocket/education/crt/index.htm>

How to Build a Magnetometer  (2 min 28 sec)

<https://www.youtube.com/watch?v=qvHzprMSjXA>

The Electric Atmosphere

<https://www.nasa.gov/mission_pages/rbsp/news/electric-atmosphere.html>

**Electric Fields:**

Khan Academy – Electric Field

<https://www.khanacademy.org/science/physics/electric-charge-electric-force-and-voltage/electric-field/v/electrostatics-part-2>

What is Electrostatics? (Inductive and Conductive Charges) (Classic Video)

<https://www.youtube.com/watch?v=6_Hl1g_lnK0>

Crash Course in Electricity:

<https://video.search.yahoo.com/yhs/search;_ylt=A0LEVvDr.ctZWgkAFF0PxQt.?p=physiological+effect+of+electrostatic+charges+to+humans&fr=yhs-iry-fullyhosted_003&fr2=piv-web&hspart=iry&hsimp=yhs-fullyhosted_003&type=mnn_frmr_17_37#id=2&vid=9b3c21e42ce746755f3b3729882b59b8&action=view>

PVC Static Electricity Experiments:

<https://video.search.yahoo.com/yhs/search?fr=yhs-itm-001&hsimp=yhs-001&hspart=itm&p=how+to+demonstrate+electrostatics#id=5&vid=8534ccebdc435de798f20f18bf4be318&action=click>

9 Awesome Science Tricks Using Static Electricity:

<https://www.youtube.com/watch?v=ViZNgU-Yt-Y>

Charged Knitting Needle in Space with Water Droplets: (frist 5 min of video)

<https://www.youtube.com/watch?time_continue=253&v=v8JflYUt89w>

Cosmic rays: particles from space

<https://home.cern/about/physics/cosmic-rays-particles-outer-space>

**Electrostatic Effects on Equipment in Space:**Magnetometer in a Plastic Bottle

<http://lasp.colorado.edu/home/wp-content/uploads/2011/08/magnetometer.pdf>

**Physiological Effects of Space on Humans:**

Understanding Space Radiation:

<https://spaceflight.nasa.gov/spacenews/factsheets/pdfs/radiation.pdf>

Radiation Counter Measures:

<https://www.nasa.gov/pdf/284275main_Radiation_HS_Mod3.pdf>

Meeting the Grand Challenge of Protecting an Astronaut’s Health: Electrostatic Active Space Radiation:

<https://www.nasa.gov/pdf/637128main_Tripathi_Presentation.pdf>

Anamolous Long Term Effects on Astronauts Central Nervous Systems  (ALTEA)

<https://www.nasa.gov/mission_pages/station/research/experiments/137.html>

Radiation Effects on Electronics 101:

<https://nepp.nasa.gov/DocUploads/392333B0-7A48-4A04-A3A72B0B1DD73343/Rad_Effects_101_WebEx.pdf>

**The biological effects associated with X-rays, risk and practical radiation protection**

<https://pocketdentistry.com/7-the-biological-effects-associated-with-x-rays-risk-and-practical-radiation-protection/>

Bodner Research Web:  Ionizing Radiation

<http://chemed.chem.purdue.edu/genchem/topicreview/bp/ch23/radiation.php>

Could We Survive Prolonged Space Travel?

<https://www.youtube.com/watch?time_continue=26&v=upp9-w6GPhU>

[Radiation protection in space - umu.se](http://www.tp.umu.se/space/Proj_10/Daniel_H-10.pdf)

<http://www.tp.umu.se/space/Proj_10/Daniel_H-10.pdf>

**Articles and Books:**

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Jump up ^ Scott, Jim (30 September 2017). "Large solar storm sparks global aurora and doubles radiation levels on the martian surface". Phys.org. Retrieved 30 September 2017.
Jump up ^ Vazquez, M.E. (1998). "Neurobiological problems in long-term deep space flights". Adv. Space Res. 22 (2): 171–173. Bibcode:1998AdSpR..22..171V. doi:10.1016/S0273-1177(98)80009-4.

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Hellweg, CE; Baumstark-Kahn, C (2007). "Getting ready for the manned mission to Mars: the astronauts' risk from space radiation". Naturwissenschaften. 94 (7): 517–519. Bibcode:2007NW.....94..517H. PMID 17235598. doi:10.1007/s00114-006-0204-0.

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