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## **GG 140 - The Atmosphere, the Ocean and Environmental Change with Professor Ronald B. Smith**

### **Lecture 9 – Water in the Atmosphere**

#### **Stability, Emissions in the Atmosphere slide deck**

1. Stability. Image credit: Dr. John W. (Jack) Glendening, Meteorologist <http://www.drjack.info/INFO/analysis.html> (Accessed Oct. 15, 2011)

4. Los Angeles Smog. Image credit: Alan Clements. <http://www.pbase.com/clements/image/33299103> (Accessed Oct. 15, 2011)

Smog in Santiago. Image credit: Abraham Love. <http://www.abrahamlove.com/NBH/index.php?m=03&y=08> (Accessed Oct. 15, 2011)

Smog in Mexico City. Image credit: Julio Etchart. <http://www.ucar.edu/news/features/urbanair/> (Accessed Oct. 15, 2011)

Smog in Beijing. Image credit: RBI Connections. <http://www.rbibearing.com/newsletters/2008/0308/0308.html> (Accessed Oct. 15, 2011)

6. Lake Nyos. Image credit: Jack Lockwood, US Geological Survey. <http://www.volcano.si.edu/world/volcano.cfm?vnum=0204-03-&volpage=photos&photo=002064> (Accessed Oct. 15, 2011)

Lake Nyos. Image credit: Water Encyclopedia. <http://www.waterencyclopedia.com/Hy-La/Lakes-Chemical-Processes.html> (Accessed Oct. 15, 2011)

Lake Nyos. Image credit: Abter Abbot. <http://nightshadehoney.blogspot.com/2011/04/lake-nyos-disaster.html> (Accessed Oct. 15, 2011)

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7. Bhopal. Image credit: Bhopal Medical Appeal. <http://www.lenntech.com/environmental-disasters.htm> (Accessed Oct. 15, 2011)

Bhopal. Image credit: Ramesh Lalwani.

[http://www.trekearth.com/gallery/Asia/India/Central/Madhya\\_Pradesh/Bhopal/photo498437.htm](http://www.trekearth.com/gallery/Asia/India/Central/Madhya_Pradesh/Bhopal/photo498437.htm) (Accessed Oct. 15, 2011)

8. Bhopal. Image credit: Terra Daily .

[http://www.terradaily.com/reports/Protests\\_Vigils\\_Mark\\_21St\\_Anniversary\\_Of\\_1984\\_Bhopal\\_Gas\\_Tragedy.html](http://www.terradaily.com/reports/Protests_Vigils_Mark_21St_Anniversary_Of_1984_Bhopal_Gas_Tragedy.html) (Accessed Oct. 15, 2011)

Bhopal. Image credit: Time Magazine. <http://www.time.com/time/covers/0,16641,19841217,00.html> (Accessed Oct. 15, 2011)

Bhopal. Image credit: Getty Images. <http://www.telegraph.co.uk/news/worldnews/asia/india/6709157/Bhopal-disaster-doctor-dying-from-exposure-to-same-pesticides.html> (Accessed Oct. 15, 2011)

9. Chernobyl. Image credit: Smith, J.T and Beresford, N.A. <http://www.bigtrends.com/options/post-chernobyl-spx-performance-may-be-repeating/> (Accessed Oct. 15, 2011)

Chernobyl. Image credit: Soviet Authorities, Wikipedia. [http://en.wikipedia.org/wiki/File:Chernobyl\\_Disaster.jpg](http://en.wikipedia.org/wiki/File:Chernobyl_Disaster.jpg) (Accessed Oct. 15, 2011)

10. Nuclear Testing. Image credit: Jack W. Aeby. [http://en.wikipedia.org/wiki/File:Trinity\\_shot\\_color.jpg](http://en.wikipedia.org/wiki/File:Trinity_shot_color.jpg) (Accessed Oct. 15, 2011)

Nuclear Testing. Image credit: J.B. Kreiger, Ohio Wesleyan University.

[http://krygier.owu.edu/krygier\\_html/geog\\_111/geog\\_111\\_lo/geog\\_111\\_lo02.html](http://krygier.owu.edu/krygier_html/geog_111/geog_111_lo/geog_111_lo02.html) (Accessed Oct. 15, 2011)

11. Forest Fires. Image credit: Dave Schumaker. <http://www.learnnc.org/lp/multimedia/3282> (Accessed Oct. 15, 2011)

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Forest Fires. Image credit: US National Interagency Fire Center.

[http://www.nifc.gov/wildlandPhotos/wildlandPhotos\\_main.html](http://www.nifc.gov/wildlandPhotos/wildlandPhotos_main.html) (Accessed Oct. 15, 2011)

12. Smoke Stacks. Image credit: Blog Upstream. <http://upstrm.wordpress.com/2011/06/13/dirty-coal/> (Accessed Oct. 15, 2011)

Smoke Stacks. Image credit: Hunter – CUNY.

[http://www.geography.hunter.cuny.edu/~tbw/wc.notes/13.air.pollution/smoke\\_stacks.htm](http://www.geography.hunter.cuny.edu/~tbw/wc.notes/13.air.pollution/smoke_stacks.htm) (Accessed Oct. 15, 2011)

13. Kuwait Oil Fires. Image credit: Brad McCormick, Ed.D. <http://www.users.cloud9.net/~bradmcc/cgi-bin/vulmag3.pl?i=167> (Accessed Oct. 15, 2011)

14. Kuwait Oil Fires. Image credit: NASA. <http://earth.jsc.nasa.gov/sseop/EFS/printinfo.pl?PHOTO=STS037-152-91> (Accessed Oct. 15, 2011)

15. Iceland Volcano. Image credit: Mail Foreign Service, Daily Mail (April 23, 2010), <http://www.dailymail.co.uk/news/article-1268225/Iceland-volcano-Northern-Lights-appear-ash-plume.html> (Accessed Oct. 15, 2011)

16. Balloon Sounding for Iceland. Image credit: University of Wisconsin. Sept. 18, 2011.

17. Dust Storm from the Sahara. Image credit: US Geological Survey. <http://antiguaisland.blogspot.com/2007/03/sahara-dust.html> (Accessed Oct. 15, 2011)

## Clouds slide deck

4. Satellite image of Earth. Image credit: Hasler, Chesters & Jentoft-Nilsen NASA Goddard Lab for Atmospheres & Nielsen University of Hawaii September 3, 1994. <http://goes.gsfc.nasa.gov/pub/goes/goes8.full.green.earth.jpeg> (Accessed Oct. 16, 2011)

7. Sea Smoke. Image credit: Luanne Rice. <http://luannerice.net/2010/12/look-up/> (Accessed Oct. 16, 2011)

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8. Contrails. Image credit: Steve Andrews. <http://www.consciousape.com/news/chemtrails-and-why-i-now-call-them-contrails-by-steve-andrews/> (Accessed Oct. 16, 2011)
9. Contrails and Cirrus Clouds. Image credit: Ed Donovan. <http://science-edu.larc.nasa.gov/SCOOL/contrail.html> (Accessed Oct. 16, 2011)
10. Water vapor condensing from breath. Image credit: J. Dana Hrubec. <http://www.polarwinter.com/2001/march.html>. (Accessed Oct. 16, 2011)