**Important Links: Volcanoes and Volcanic Ash**

**NOAA/NWS Links**

**Alaska**

[**NOAA – Alaska Aviation Weather Unit**](http://aawu.arh.noaa.gov/)

[**Anchorage Center Weather Service Unit**](http://cwsu.arh.noaa.gov/)

[**NWS Anchorage**](http://pafc.arh.noaa.gov/)

[**NWS Alaska Region Environmental and Scientific Services Division (ESSD)**](http://www.arh.noaa.gov/aboutESSD.php)

**Other**

[**NOAA – Volcanoes and Links to More information**](http://www.noaawatch.gov/themes/volcanoes.php)

[**NOAA - Volcano Data and Information (NGDC) – Natural Hazards**](http://www.ngdc.noaa.gov/hazard/volcano.shtml)

[**NOAA - Volcanic Ash Advisory Database (NGDC)**](http://www.ngdc.noaa.gov/hazard/vol_ash.shtml)

[**NOAA/NESDIS - Experimental GOES Volcanic Ash Products**](http://www.star.nesdis.noaa.gov/smcd/opdb/aviation/volc.html)

[**NOAA – PUFF Model Description**](http://pafc.arh.noaa.gov/puff/jvgr/puffpaper.html)

[**NOAA – HYSPLIT Model Description**](http://www.arl.noaa.gov/HYSPLIT_info.php)

[**NOAA - Volcanic Ash Coordination Tool (VACT)**](https://vact.noaa.gov/asdad/projects/vact/)

[**NOAA/NESDIS/SSD – Volcano Webcam Links**](http://www.ssd.noaa.gov/VAAC/cams.html)

[**NOAA – READY: Volcanic Ash Transport And Dispersion (HYSPLIT Model)**](http://ready.arl.noaa.gov/READYVolcAsh.php)

[**NOAA/NWS Forecast Decision Training Branch (FDTB)**](http://www.fdtb.noaa.gov/)

[**NOAA/NWS Warning Decision Training Branch (WDTB)**](http://wdtb.noaa.gov/)

**USGS Links**

[**USGS – Volcano Hazards Program**](http://volcanoes.usgs.gov/)

[**USGS - REDUCING THE THREAT TO AVIATION FROM AIRBORNE VOLCANIC ASH**](http://volcanoes.usgs.gov/ash/trans/aviation_threat.html)

[**USGS – Volcanic Ash fall**](http://pubs.usgs.gov/fs/fs027-00/)

[**USGS - Volcanic Ash–Danger to Aircraft in the North Pacific**](http://pubs.usgs.gov/fs/fs030-97/)

[**USGS - Volcano Hazards Program Fact Sheets**](http://volcanoes.usgs.gov/publications/factsheets.php)

[**USGS - Volcano Hazard Assessments**](http://volcanoes.usgs.gov/publications/assessments.php)

[**USGS - Volcano Hazards Program Publications**](http://volcanoes.usgs.gov/publications/otherpubs.php)

[**USGS - NVEWS: National Volcano Early Warning System**](http://volcanoes.usgs.gov/publications/2009/nvews.php)

[**USGS – Ash Properties**](http://volcanoes.usgs.gov/ash/properties.html)

[**USGS – Mount St. Helens**](http://www.creationism.org/sthelens/USGS1250/USGS1250k323-333.htm)

[**USGS - Volcanic Gases and Their Effects**](http://volcanoes.usgs.gov/hazards/gas/index.php)

[**USGS – Volcano Status Map**](http://volcanoes.usgs.gov/activity/)

[**USGS – Volcanoes (The Book)**](http://pubs.usgs.gov/gip/volc/)

**Volcanic Ash Advisory Centers (VAAC) of the World**

[**Anchorage, AK, United States**](http://vaac.arh.noaa.gov/)

[**Buenos Aires, Argentina**](http://www.smn.gov.ar/?mod=vaac&id=1)

[**Darwin, Australia**](http://www.bom.gov.au/info/vaac/)

[**London, United Kingdom**](http://www.metoffice.gov.uk/aviation/vaac/index.html)

[**Montreal, Canada**](http://meteo.gc.ca/eer/vaac/index_e.html)

[**Tokyo, Japan**](http://ds.data.jma.go.jp/svd/vaac/data/index.html)

[**Toulouse, France**](http://www.meteo.fr/vaac/)

[**Washington, DC, United States**](http://www.ssd.noaa.gov/VAAC/washington.html)

[**Wellington, New Zealand**](http://vaac.metservice.com/vaac/index.php)

**Volcano Observatories**

[**Alaska Volcano Observatory**](http://www.avo.alaska.edu/)

[**Cascades Volcano Observatory**](http://vulcan.wr.usgs.gov/)

[**Hawaiian Volcano Observatory**](http://hvo.wr.usgs.gov/)

[**Long Valley Observatory**](http://lvo.wr.usgs.gov/index.html)

[**Yellowstone Volcano Observatory**](http://volcanoes.usgs.gov/yvo/)

[**World Organization of Volcano Observatories**](http://www.wovo.org/)

[**The Rest of the Observatories of the World**](http://www.wovo.org/Observatories.html)

**All The rest**

[**Oregon Risk Management – Ash Fall**](http://www.oregon.gov/DAS/SSD/Risk/RisKeyAshFall.shtml)

[**Boeing Volcanic Ash Avoidance**](http://www.boeing.com/commercial/aeromagazine/aero_09/volcanic_story.html)

[**National Weather Association – Gary Ellrod, Remote Sensing of Volcanic Ash**](http://www.nwas.org/committees/rs/volcano/ash.htm)

[**Airline Pilots Association (ALPA) Volcanic Ash and Aviation Safety**](http://alpa.org/Portals/Alpa/VolcanicAsh/VolcanicAsh.htm)

[**San Diego State University – How Volcanoes Work**](http://www.geology.sdsu.edu/how_volcanoes_work/)

[**The Volcanoes of Canada**](http://gsc.nrcan.gc.ca/volcanoes/index_e.php)

[**Michigan Tech University – Volcanic Clouds**](http://www.geo.mtu.edu/volcanoes/vc_web/)

[**Michigan Tech University – Volcano Information Links**](http://www.geo.mtu.edu/volcanoes/)

[**NASA Images and Articles**](http://earthobservatory.nasa.gov/NaturalHazards/category.php?cat_id=12)

[**Idaho State University - Volcanoes**](http://wapi.isu.edu/EnvGeo/EG6_volcano/volcanoes.htm)

[**University of Wisconsin SSEC – Volcano Watch**](http://www.ssec.wisc.edu/data/volcano.html)

[**Colorado State University – Volcanic Ash Detection**](http://www.cira.colostate.edu/cira/RAMM/newgoes/volcash.htm)

[**The Smithsonian's Global Volcanism Program**](http://www.volcano.si.edu/)

[**National Volcanic Ash Operations Plan for Aviation**](http://www.ofcm.gov/p35-nvaopa/fcm-p35.htm)

[**Center for Satellite Based Crisis Information**](http://www.zki.caf.dlr.de/intro_en.html)

[**MetOffice (United Kingdom) - Volcanoes**](http://www.metoffice.gov.uk/corporate/pressoffice/2010/volcano.html)

[**Rhenish Institute for Environmental Research – Ash Dispersion**](http://www.eurad.uni-koeln.de/index_e.html)

[**EUMETSAT – Near Real Time Ash Retrievals**](http://oiswww.eumetsat.org/IPPS/html/MSG/RGB/ASH/ICELAND/)

[**University Wisconsin Space Science Engineering Center (SSEC)**](http://www.ssec.wisc.edu/)

[**UW Cooperative Institute for Meteorological Satellite Studies (CIMSS)**](http://cimss.ssec.wisc.edu/)

[**CIMSS – Satellite Blog**](http://cimss.ssec.wisc.edu/goes/blog/)

[**State of Alaska Div. Air Quality – Volcanic Ash Fall**](http://www.dec.state.ak.us/air/volcano.htm)

[**Colorado State University – Cooperative Institute for Research in the Atmosphere (CIRA)**](http://www.cira.colostate.edu/)

[**Colorado State University CIRA – VISIT Program**](http://rammb.cira.colostate.edu/visit/visithome.asp)

[**International Airways Volcano Watch Operations Group (IAVWOPSG)**](http://www2.icao.int/en/anb/met-aim/met/iavwopsg/Pages/default.aspx)

[**IC4D Users Guide and Software/Hardware Architecture**](http://www.google.com/url?sa=t&source=web&cd=2&ved=0CBoQFjAB&url=http%3A%2F%2Fwww.arh.noaa.gov%2Farhdata%2Faccess%2FAviationWorkshop08%2FIC4D_Hall.ppt&ei=moHATICPEIOisQOK54z1Cw&usg=AFQjCNGO3YzDkXDZZubITUOrW20tlBbu6w&sig2=KGHb1e2CRAxBEr0NQ3xDeQ)