



AOMSUC-12

11 - 18 November 2022

Online, Hosted by Japan Meteorological Agency



12th Asia - Oceania Meteorological Satellite Users' Conference

**Satellite Meteorology Training in WMO RA V during
2021/2022:
The Australian VLab Centre of Excellence experience**

Mr Bodo Zeschke

Teacher, Australian Bureau of Meteorology Training Centre
Point of Contact, Australian VLab Centre of Excellence

Topics to be presented

- Celebrating 9 Years of Regional Focus Group (RFG) meetings
- Statistics of the past year of RFG meetings
- Contributions by attendees
 - Individual presentations
 - Cooperative case studies
 - Multiple "mini case studies" within one meeting
- Celebrating the 100th Australian VLab CoE RFG meeting
- Archive of recordings of the RFG meetings

First Regional Focus Group meeting October 2013



HAPPY BIRTHDAY 9th



3402+ attendees, 104 sessions



105th meeting during the AOMSUC-12 Training Event

or Monthly Analysis

Highlights of the VLab Sessions of 2021 / 2022: A constellation of presenters from across the region

On the rapid intensification (and weakening) of Tropical Cyclones Vernon and Charlotte
 Australian Government Bureau of Meteorology
 Joe Courtney VLAB 29 March 2022

Rapid Intensity change remains a major forecasting challenge
 Highlight satellite signatures of recent events
 30kn/24h

Socrative: socrative.com
 Login as student
 Room: VLAB2022
 (anonymous)

Acknowledgements: CIMSS <https://tropic.ssec.wisc.edu/tropic.php>
 microwave NRL https://www.nrlmry.navy.mil/tc-bin/tc_home2.cgi
 Scatterometry NOAA <https://manati.star.nesdis.noaa.gov/datasets/ASCATData.php>
 Other imagery: CIRA <https://rammb-dat>



Mr Joe Courtney

March 2022

Investigating a Cold Wave case study utilizing satellite data

Mr. DI XIAN (xiandi@cma.gov.cn)
 Deputy Director of International User Service Center
 National Satellite Meteorological Center
 (National Center for Space Weather)



Mr Di Xian

April 2022

Summary of the recent achievements of the environment disaster and agriculture monitoring using FengYun satellites

Gao Hao
 gaohao@cma.gov.cn
 National Satellite Meteorological Center (NSMC)
 China Meteorological Administration (CMA)
 October 29, 2021



Mr Gao Hao

October 2021

SIGNIFICANT WAVE HEIGHT OBSERVATIONS
 HOW TO MAKE VIEWING THEM EFFICIENT

Scott Lindstrom
 University of Wisconsin-Madison
 CIMSS



Mr Scott Lindstrom

August 2022

RGB Cloud Phase Distance Receipt on Tropical Region

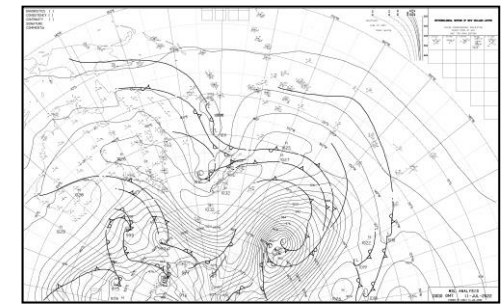
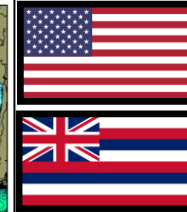
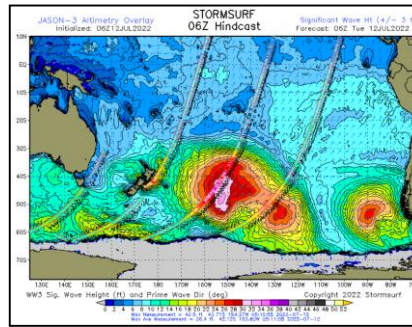
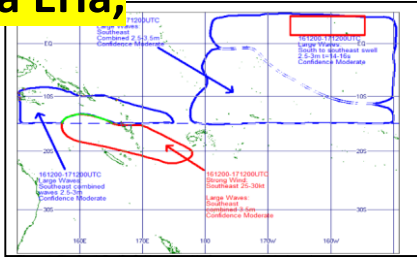
Indonesia Agency for Meteorology Climatology and Geophysics (BMKG)
 By: Rion S. Salman



Mr Rion Salman

September 2022

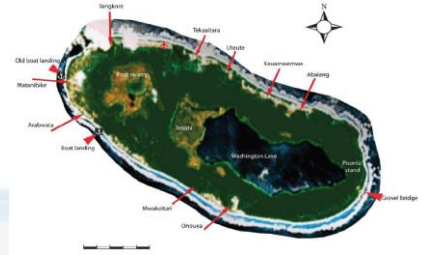
Mauna Eria,



Miriam Kataunati

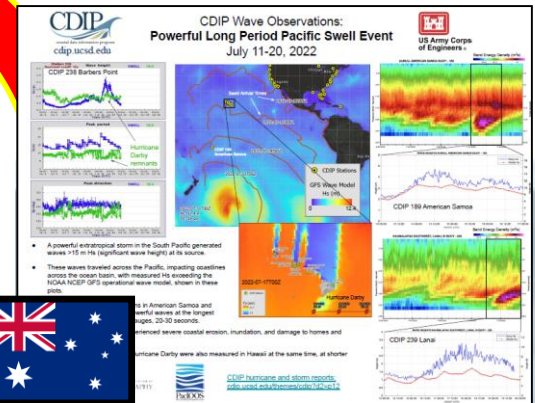
Jennifer Strahl, Dr Eric Lau,

Chris Webster

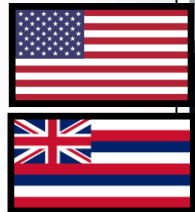


Cooperative Case Study 1:

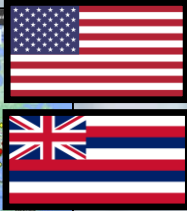
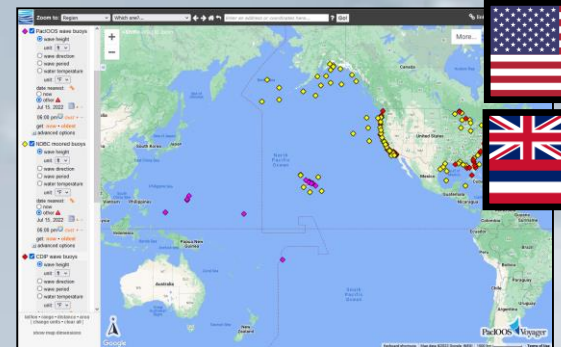
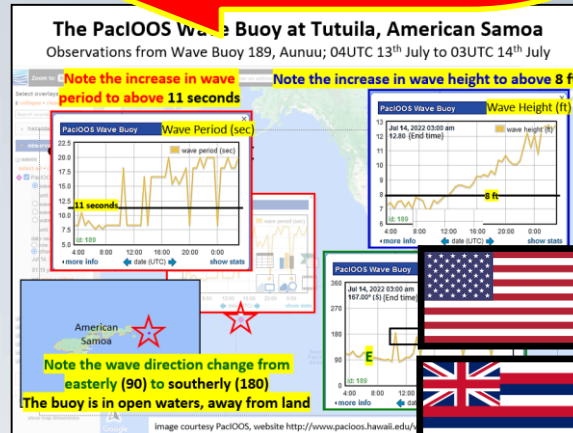
Significant Swell event, Pacific Ocean 11-17th July 2022, as monitored by satellite and surface observations and NWP model data



Tristan Oakley, Dr Alison Nugent



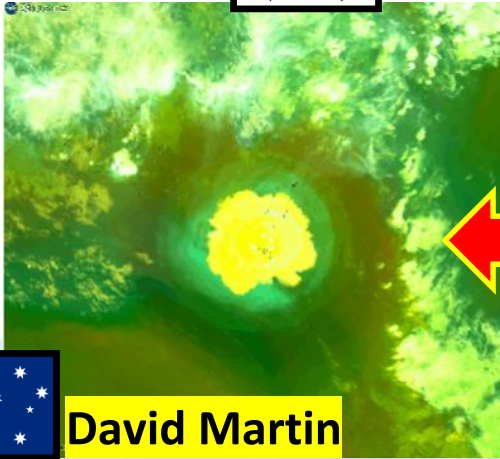
...also Chip Young, Prof. Steven Businger, Ning Li.



Professor Yi-Leng Chen

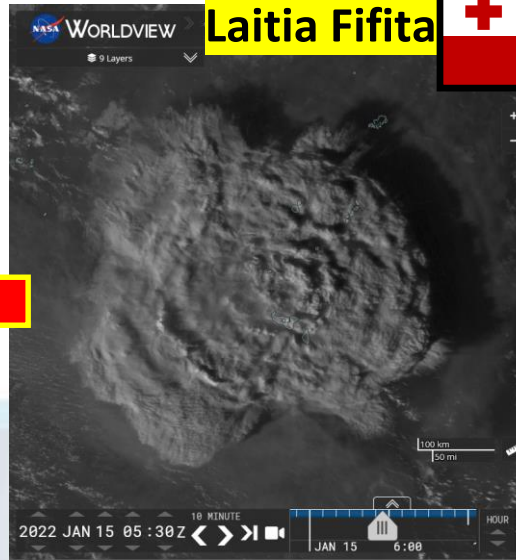
Cooperative Case Study 2: The eruption of Hunga Tonga-Hunga Ha'apai volcano, 15th January 2022

Ok Hee Kim

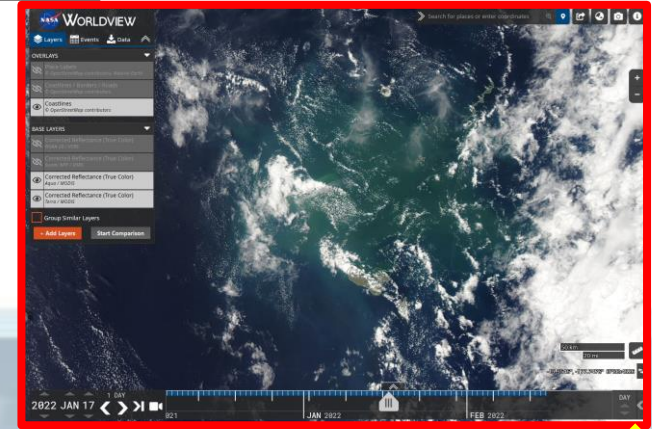


2: The shock wave of the eruption

Laitia Fifita



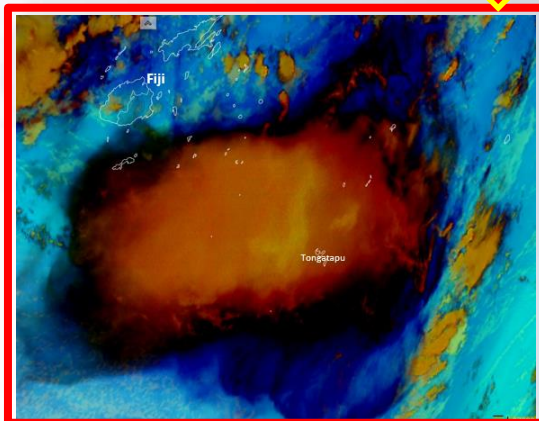
1: Introduction



5: Marine conditions around the eruption



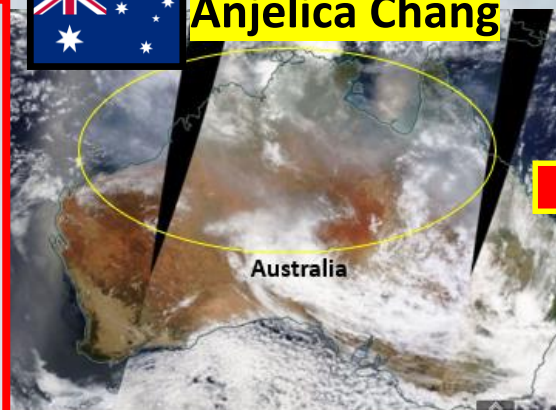
David Martin



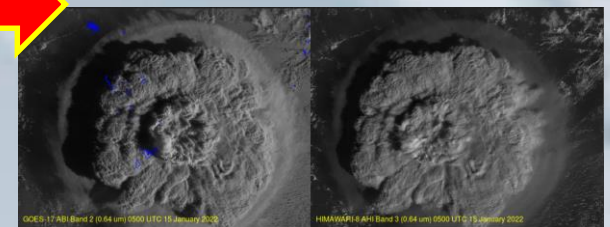
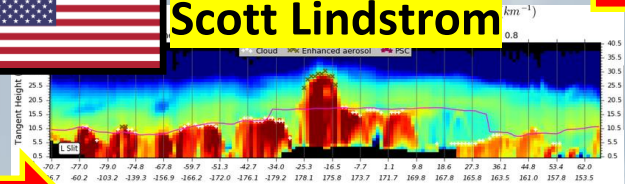
3: Spreading out of the ash/SO2 from the eruption



Anjelica Chang



Scott Lindstrom



4: The height of the eruption

Multiple "mini case studies" within one meeting:

Meteorological highlights of the year 2021

RFG meeting December 2021. Format recommended by Jordan Gerth (NOAA / USA)

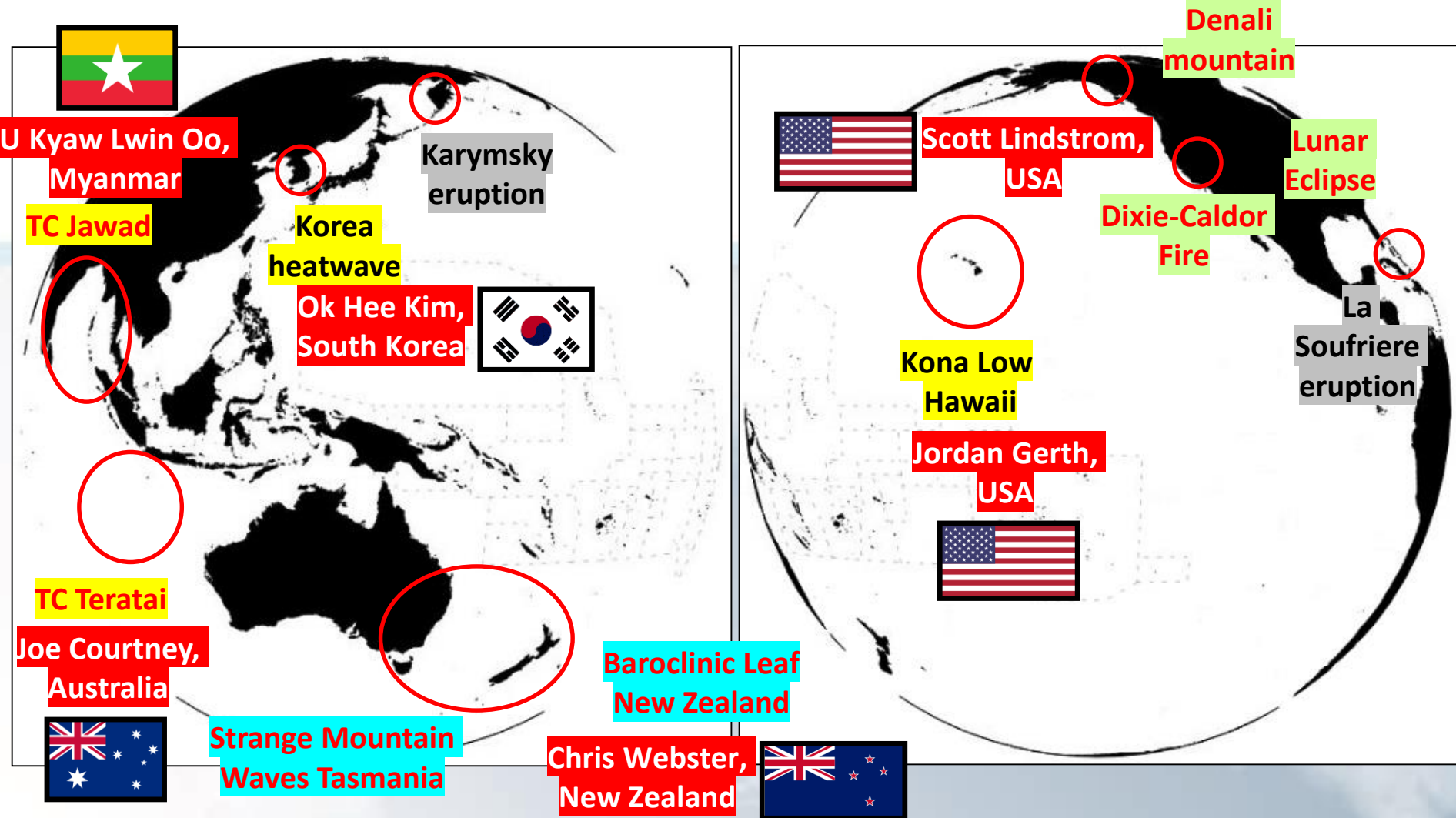
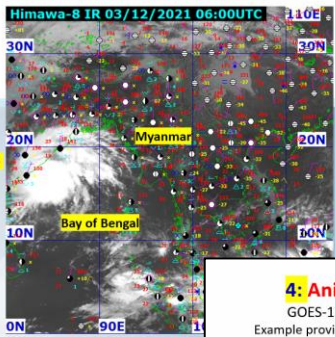


Image provided by U Kyaw Lwin Oo, Myanmar Department of Meteorology and Hydrology

1: Tropical Cyclone 05B "Jawad".

Example provided by U Kyaw Lwin Oo, Myanmar Department of Meteorology and Hydrology

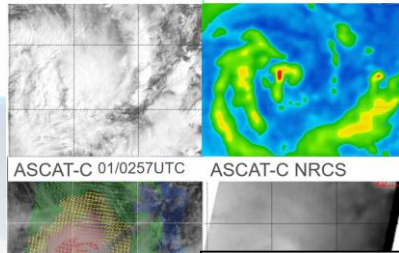


Tropical Cyclone 05B "Jawad".

2: Formation of Tropical Cyclone 05U "Teratai".

Example provided by Joe Courtney, Australian Bureau of Meteorology

Vis 01/0100UTC SSMIS 89GHz 30/2348UTC

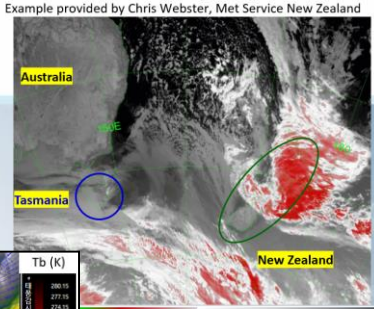


ASCAT-C 01/0257UTC

ASCAT-C NRCS

3: Animation: Baroclinic Leaf over New Zealand, Mountain Waves over Tasmania.

Example provided by Chris Webster, Met Service New Zealand



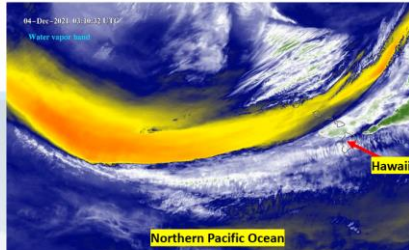
Australia

Tasmania

New Zealand

4: Animation: A Kona Low impacting Hawaii

Example provided by Jordan Gerth, NOAA, animation courtesy Tim Schmit NOAA



04-Dec-2021 03:30:21 UTC

Water vapor band

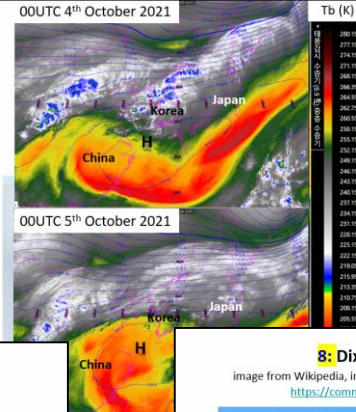
Hawaii

Northern Pacific Ocean

5: Korea Heatwave

GEO-KOMPSAT-2A 6.9 micron band and 500hPa height
4th - 5th October 2021

Example provided by Ok Hee Kim, Korea Meteorological Administration, Korea VLab Centre of Excellence



00UTC 4th October 2021

00UTC 5th October 2021

Tb (K)



Lunar Eclipse

Caldor Fire

6: Animation: La Soufriere volcanic eruption in 1 minute imagery

Example provided by Scott Lindstrom, SSEC University of Wisconsin-Madison



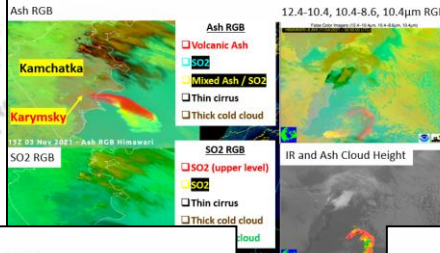
CSPP True Colour Imagery, 11th April 2021

Example provided by Scott Lindstrom, SSEC University of Wisconsin-Madison

La Soufriere

7: Karymsky volcanic eruption, Kamchatka, Russia

Example provided by Scott Lindstrom, SSEC University of Wisconsin-Madison



Ash RGB

12.4-10.4, 10.4-8.6, 10.4µm RGB

SO2 RGB

IR and Ash Cloud Height

0050Z 04 Nov 2021 SO2 Index Product NOAA-20 VIIRS

12.4-10.4, 10.4-8.6, 10.4µm RGB

IR and Ash Cloud Height

0050Z 04 Nov 2021 SO2 Index Product NOAA-20 VIIRS

12.4-10.4, 10.4-8.6, 10.4µm RGB

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0050Z 04 Nov 2021 SO2 Index Product NOAA-20 VIIRS

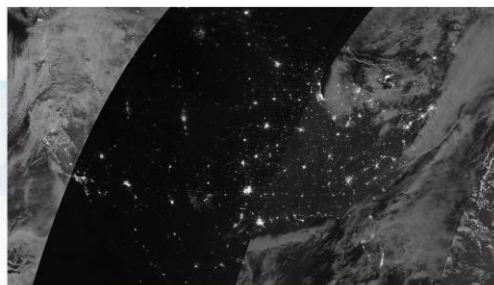
8: Dixie-Caldor Fire, California, USA

Image from Wikipedia, image courtesy by Frank Schulenburg - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=107802721>



9: Lunar Eclipse, USA

Example provided by Scott Lindstrom, SSEC University of Wisconsin-Madison



10: Denali, USA. The highest mountain in North America

Example provided by Scott Lindstrom, SSEC University of Wisconsin-Madison



Example provided by Scott Lindstrom, SSEC University of Wisconsin-Madison

U Kyaw Lwin Oo, Myanmar

TC Jawad

Joe Courtney, Australia



Straw

Baroclinic Leaf

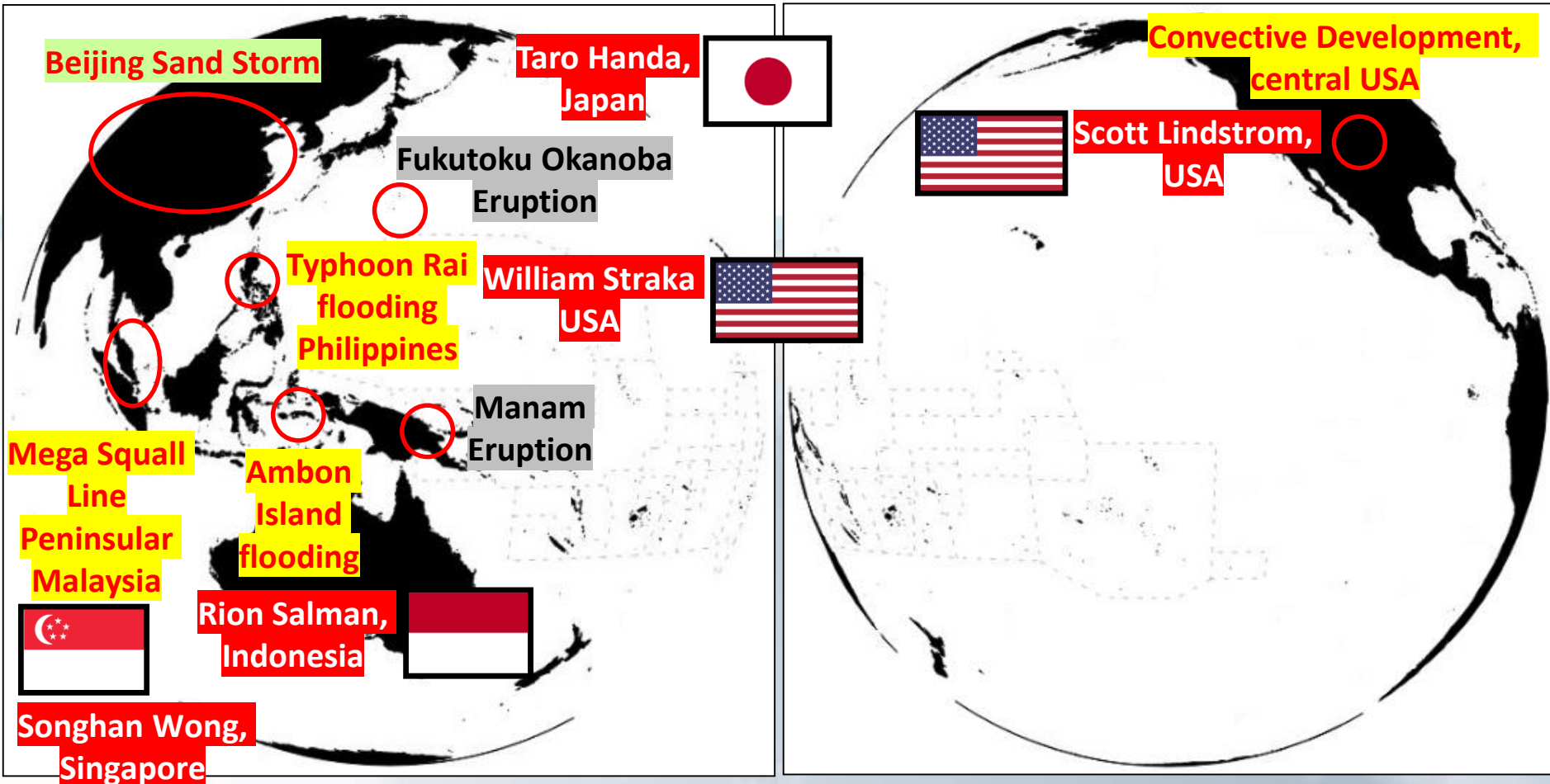
New Zealand

Chris Webster, Met Service New Zealand

Multiple "mini case studies" within one meeting:

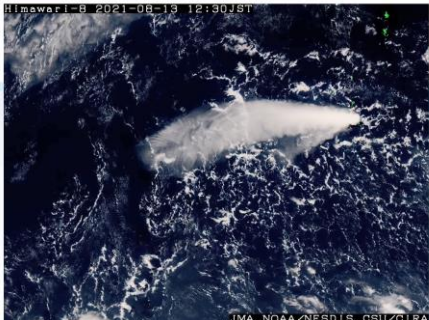
Meteorological highlights of the year 2021

RFG meeting January 2022. Format recommended by Jordan Gerth (NOAA / USA)



animation provided by Taro Handa, Japan Meteorological Agency

1: Animation: Eruption of the undersea volcano Fukutoku-Okanoba. True Colour RGB / infrared imagery 21UTC 13th to 06UTC 15th August 2021. Example provided by Taro Handa, Japan Meteorological Agency



Himawari-8 2021-08-13 12:30JST




Image from Wikipedia

JMA, NOAA/NESDIS, CSU/CIRA

Images courtesy JMA

2: The eruption of Manam Volcano, Papua New Guinea. True Colour RGB imagery 21UTC 19th to 04UTC 20th October 2021. Example provided by Scott Lindstrom, SSEC University of Wisconsin-Madison



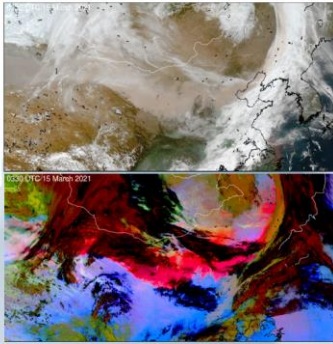
https://cimss.ssec.wisc.edu/satellite-blog/images/2021/10/211019_himawari8_trueColorRGB_Manam_anim.gif

Images courtesy JMA

3: Beijing Sandstorm 0330UTC 15th March 2021 True Colour RGB image (top) Dust RGB image (bottom)

Example provided by Scott Lindstrom, SSEC University of Wisconsin-Madison

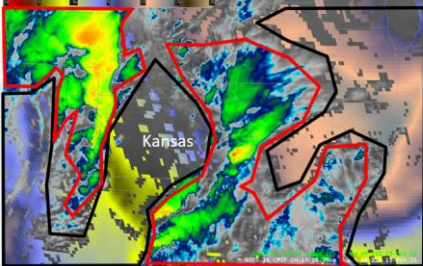
Scott's comments: "Am thinking about the weather that might happen during the 2022 Winter Olympics."



https://cimss.ssec.wisc.edu/satellite-blog/wp-content/uploads/sites/5/2021/03/HIMAWARI-8_AH1_true_color_dustRGB_20210315_0330Toggle.gif

Images courtesy JMA

4: Band 13 / LI with convection, central USA . True Colour RGB imagery 21UTC 19th to 04UTC 20th October 2021. Example provided by Scott Lindstrom, SSEC University of Wisconsin-Madison

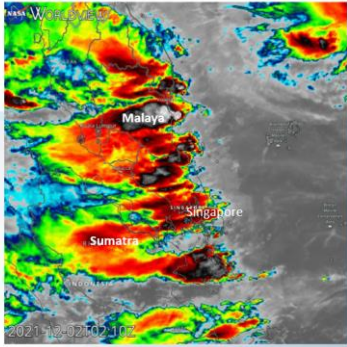


I like this one because it shows the power in blending a level 2 product (clear sky) with Band 13 (where it's cloudy) when convection is developing!

https://cimss.ssec.wisc.edu/satellite-blog/wp-content/uploads/sites/5/2021/10/G16ABIand13_DSI_20201012_2201_to_20211013_0646anim.gif

Animation from NASA Worldview

5: Animation: Mega Squall Line over Peninsular Malaysia Example provided by Songhan Wong, NEA Singapore



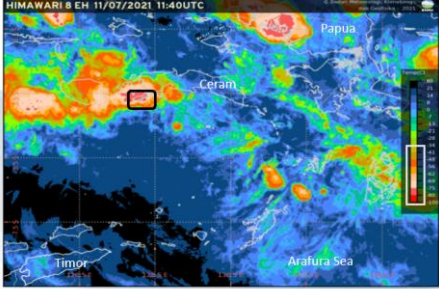
Himawari-8 Enhanced IR. 1830UTC 1st December to 0310UTC 2nd December 2021

Clean Infrared (10.3 μm, Band 13, 10 minute) Minimum-Axial

-60.0 °C -15°C -57.0 °C

animation courtesy BMKG Indonesia / JMA

6: Animation: Ambon Island flooding Himawari-8 Enhanced Infrared (Band 13), 05UTC to 16UTC 11th July 2021 Example provided by Rion Salman, BMKG Indonesia



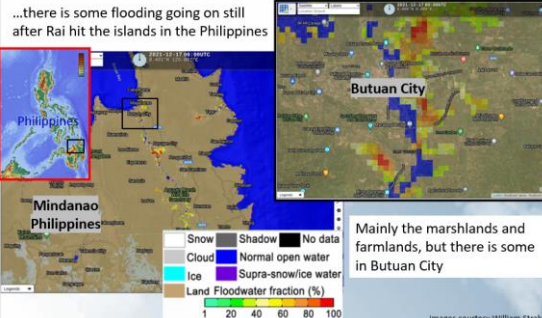
HIMAWARI 8 EH 11/07/2021 11:40UTC

- < -40 (Top of cloud temperature) indicating Cumulonimbus Cloud
- Heavy rainfall with resultant flooding and landslides

Philippine map by Seventide - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=3205629>

7: Philippine flooding 17th December 2021. NOAA Global Flood Product Example provided by William Straka, SSEC, University of Wisconsin/Madison USA.

...there is some flooding going on still after Rai hit the islands in the Philippines



Mainly the marshlands and farmlands, but there is some in Butuan City

Images courtesy William Straka

Mega Squall Line Peninsular Malaysia

Songhan Wong Singapore

Recordings of our Regional Focus Group Discussions

<http://www.virtuallab.bom.gov.au/archive/regional-focus-group-recordings/>



Australian Government
Bureau of Meteorology



Melbourne VLab Centre Of Excellence



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Regional Focus Group Meeting Event Recordings

Recordings of Australian VLab Centre of Excellence Regional Focus Group Events are given below. Locations with limited Internet speed may wish to download the file before playing it (right mouse click on the link, then "Save Target As").

Content of the Regional Focus Group Meeting Events and Recordings

The next Regional Focus Group meeting will be conducted during the 12th Asia Oceania Meteorological Satellite User Conference (AOMSUC-12) Training Event on the 14 November 2022

Further information will be provided closer to time.

More information about AOMSUC-12 is provided [HERE](#) and also in the third presentation of the Regional Focus Group meeting 104 given below.

27th October 2022 Regional Focus Group meeting (104)

The topics of discussion are as follows:

- **Celebrating 9 years of the Australian VLab Centre of Excellence Regional Focus Group meetings.** Session facilitated by Mr Bodo Zeschke, Australian Bureau of Meteorology Training Centre. 14 minutes duration (52Mb .mp4)
- **Highlights of the Advancing Earth Observation Forum, Brisbane, August 2022.** Session facilitated by Mr Bodo Zeschke, Australian Bureau of Meteorology Training Centre. 28 minutes duration (90Mb .mp4)
- **An update to the 12th Asia Oceania Meteorological Satellite User Conference Training Event.** Session facilitated by Bodo Zeschke, Australian Bureau of Meteorology Training Centre with a contribution by Mr Takuya Sakashita, Japan Meteorological Agency. 6 minutes duration (18Mb .mp4)

Summary

- Celebrating 9 Years of Regional Focus Group (RFG) meetings
- Have shown the statistics of the past year of RFG meetings
- Have summarised the contributions by attendees, including
 - Individual presentations
 - Cooperative case studies
 - Multiple "mini case studies" within one meeting
- Celebrating the 100th Australian VLab CoE RFG meeting
- Advertised the archive of recordings of the RFG meetings