



# VAAC Darwin Management Report

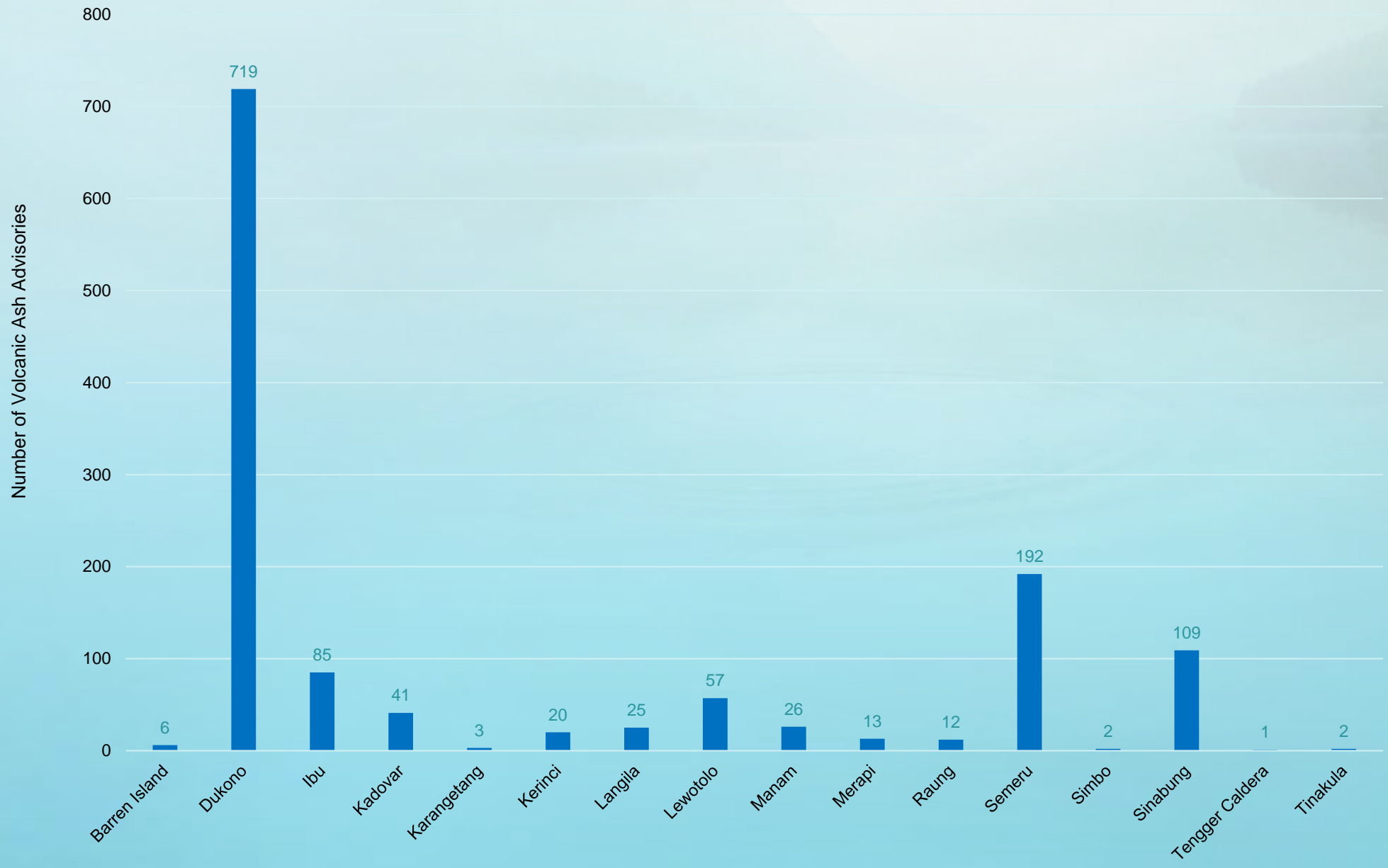
MET/S WG/11 – IP/07  
Presented by Australia

# Summary

- The paper presents an IAVW Management report for VAAC Darwin area of responsibility for the period 1 July 2020 to 31 January 2021.

# Advisories

- 1313 advisories issued from 1 July 2020 to 31 January 2021
- Most advisories were for Dukono and Semeru in Indonesia



# Mt Lewotolo Eruption

- Mt Lewotolo erupted to 50,000 feet on 29 November 2020 in Lesser Sunda Islands, Indonesia.



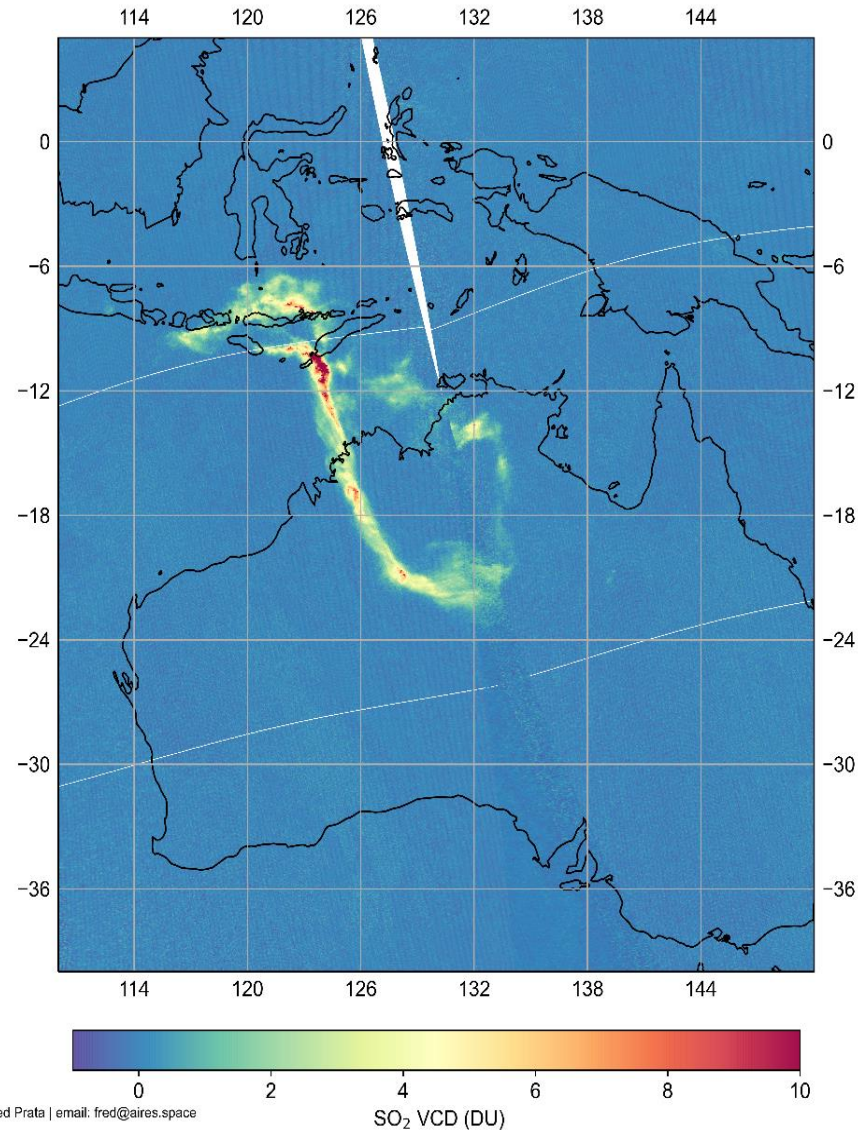
View from ground, courtesy of CVGHM



True colour visible Himawari-8 imagery at 04Z

# Mt Lewotolo Eruption

Date: 2020/11/30 Time:03:57-05:47UT SO<sub>2</sub> S5P/TROPOMI [15 km] Mass=7.76 kt



SO<sub>2</sub> signal from Lewotolo eruption  
on 29 November 2020

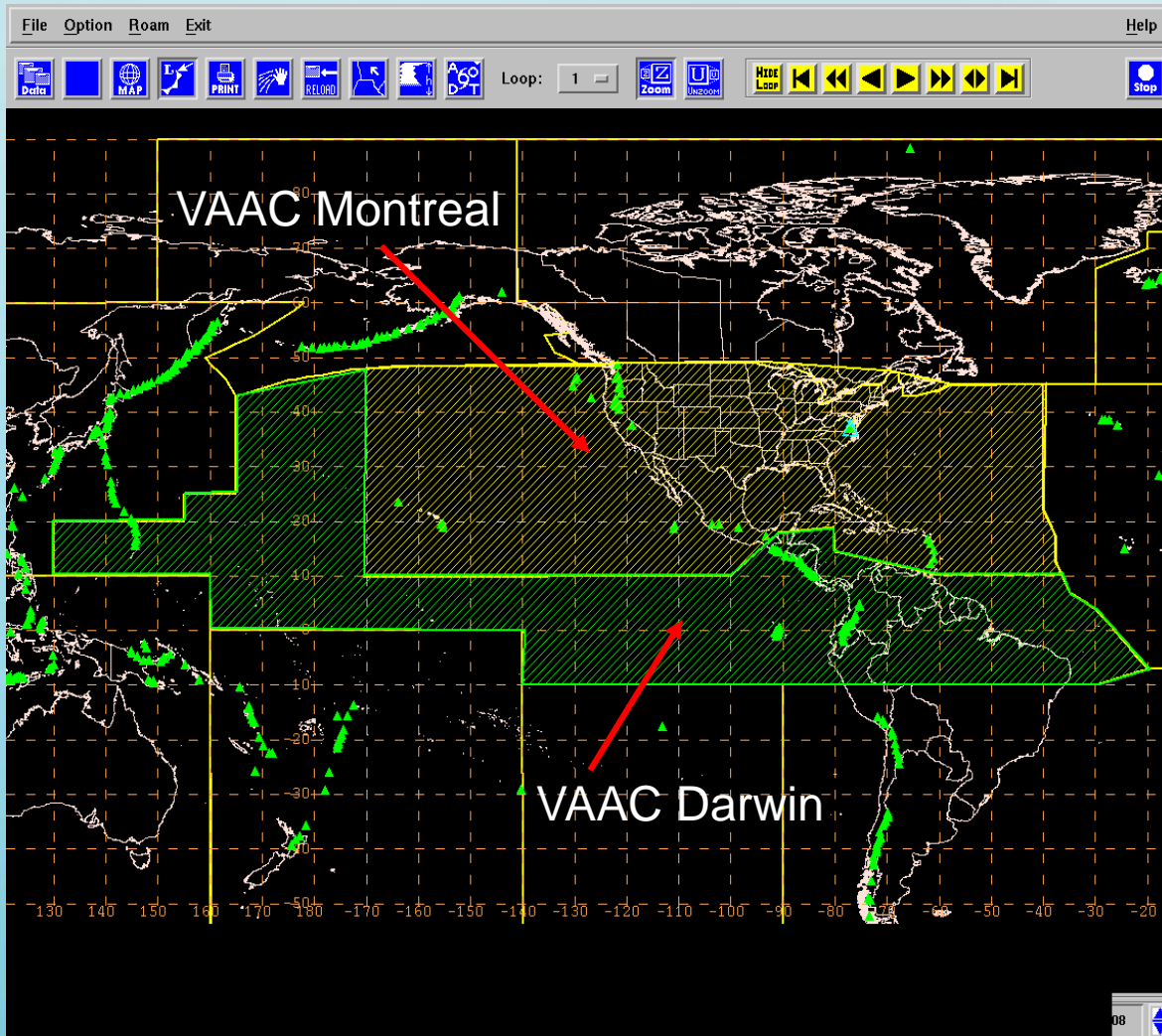
# Competencies

- VAAC Darwin is creating new ways to train forecasters and assess their skills as part of their competency assessments.
- WMO will be looking at a review of current VAAC competency framework with support from VAAC Darwin and VAAC Montreal to better align with WMO AMF competencies.
- In June 2020, VAAC Darwin transitioned to its new position in the Hazardous Weather Unit (HWU) within the new Melbourne Aviation Forecasting Centre (MAFC).
- VAAC Darwin now has 18 VAAC competent staff who rotate around three desks within the HWU.

# Business Continuity

- VAAC Darwin and the MAFC have been adapting to the ever-changing pandemic situation.
- The team has been split up into three different areas:
  - Melbourne Office Level 5
  - Melbourne Office Level 11
  - Home-based Work
- Communication and collaboration between forecasters within the changed working arrangements have been impressive and response to high level eruptions as timely as ever.

# Back-up Arrangements



- VAAC Darwin and VAAC Montreal are progressing with implementation of back-up support for VAAC Washington.
- Back-up service expected to commence in first quarter of 2021.
- All VAACs will now be aligning their back-up procedures and will include in the VAA "Issued by VAAC nnnnn on behalf of VAAC nnnnn" when issuing advisories during back-up arrangements.

# IWXXM

- VAAC Darwin is producing VAAs in IWXXM format using schema version 3.0. Further testing for minor bugs will be done during early 2021.

# Dispersion Model

- The Australian Bureau of Meteorology has a new Dispersion Ensemble Prediction System (DEPS).
- DEPS provides probabilistic forecasts for volcanic ash to help with more accurate advisories.
- DEPS helps move away from deterministic approach to better capture uncertainties.
- DEPS is a step towards quantitative volcanic ash information such as ash concentration products or data as part of work within the ICAO Met Panel Met Information and Services Development Working Group.

# Collaboration

- Collaboration has strengthened between VAAC Darwin and VAAC Wellington as they look to harmonise services.
- The two VAACs have been working on:
  - Operational processes and procedures
  - Comparison of ash dispersion models
  - Comparison of advisory and forecast creation
  - Daily check-ins
  - Back-up services and exercises
- VAAC Darwin will look to expand collaboration efforts with VAAC Tokyo in a similar way in the near future.

# Volcanic Ash Exercise

- VAAC Darwin and VAAC Wellington conducted a standalone volcanic ash exercise to support Solomon Islands with Air Navigation deficiency (AP-MET-23).
- Solomons Islands FIR 'Honiara' is split between both VAACs so a volcano from each VAAC area was used for the exercise.
- Progress report was provided to the MET-SG24 and both VAACs will continue to support Solomon Islands to remove the deficiency.

# ICAO Meteorological Panel Working Groups

- METP WG-MOG-IAVW and WG-MISD are expecting to provide draft provisions for Annex 3 and PANS-MET to the next METP meeting on the following:
  - Elevation of status of Volcano Observatory Notice for Aviation (VONA) and volcano status colour codes.
  - Probabilistic quantitative volcanic ash information.
- WG-MISD is also taking a first look at a potential operating capability for sulphur dioxide services.
- Further details on MOG and MISD activities are available in report provided to MET-SG24.

# VOLCEX

- The Volcanic Ash Exercises Steering Group (VOLCEX) has two exercises planned for each year.
- VOLCEX 20/02 was successfully conducted on 17 July 2020 in the Pacific region by Wellington, Darwin and Washington VAACs.
- A back-up procedure test between VAAC Wellington and VAAC Darwin was conducted during the exercise and coordination with VAAC Washington was conducted as ash approached their boundary.