

Introductory session

Teaching and collaboration mission, South Korea
29th May to 1st June 2018

Presenter: Bodo Zeschke

Should you use these resources please acknowledge the Australian Bureau of Meteorology Training Centre. In addition, you need to retain acknowledgement in the PowerPoint slides of EUMETSAT, the Japan Meteorological Agency, the Bureau of Meteorology and any other sources of information.



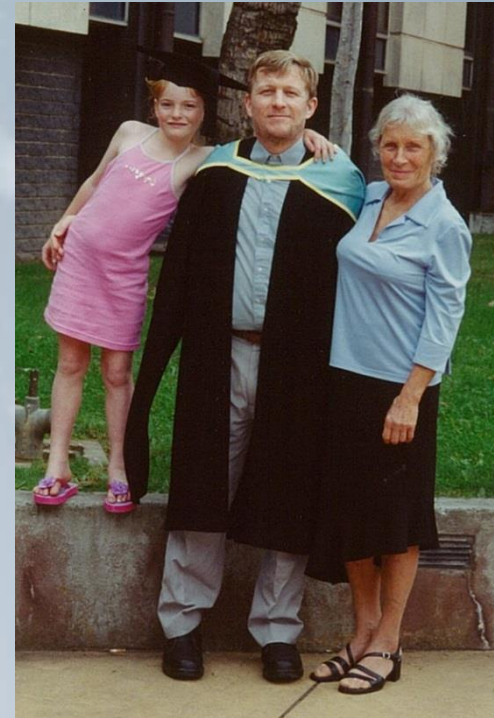
Australian Government

Bureau of Meteorology

Contents of this session

- Introducing myself
- Advertise the strong collaboration between the Australian and Korea VLab Centres of Excellence
- Introduce the content of the next three days
- Introduce Socrative and ask attendees to log into the session.
- Work through a short Socrative introductory quiz.

Hi, I am Bodo Zeschke.



Hi, I am Bodo Zeschke.

Born in Hamburg, emigrated to Australia in 1970 at the age of 10.

Emigration by ship – 4 weeks around the Cape of Good Hope.

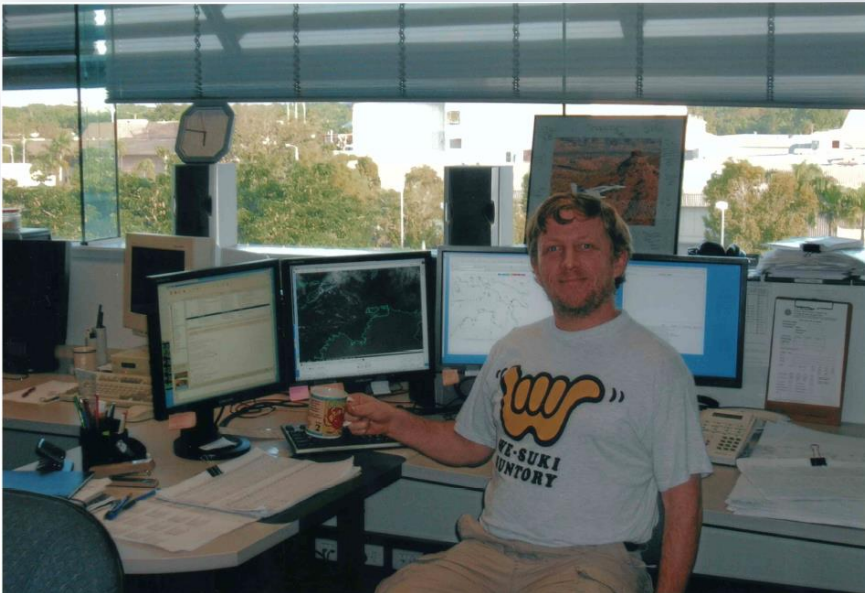
Obtained my qualifications in Australia, Masters degree in Satellite Meteorology applied to Tropical Cloud Coherences.

Eldest in a family of 8 boys and 4 girls. My parents have purchased a 10 hectare property between Sydney and Canberra (the capital).

Nice combination of city and country living. Well rounded education.

REFERENCE SLIDE

My forecasting at the Darwin RFC (2001 to 2009)



Publications (2007 to 2018)



How Himawari-8 data has revolutionised the work of Bureau

Forecasters

Bodo Zeschke, Mike Willmott, Agnes Lane and Anthony Rea
Bureau of Meteorology, Melbourne, Australia

Submitted to the Journal of Southern Hemisphere Earth Systems Science, March 2018

1

better when compared to the "sudden appearance" of the ash cloud in the hourly image data. At the Darwin Volcanic Ash Advisory Centre, this has directly lead to development of new products for industry, indicating that forecasters now have more confidence in being able to identify volcanic ash in the geostationary satellite data.

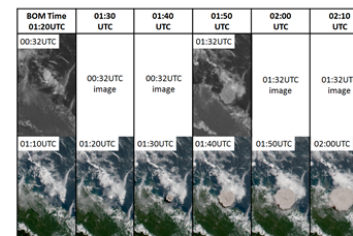


Figure 4: comparing the use of 10 minute satellite imagery using the True Colour RGB product (bottom) with hourly data using the greyscale visible channel (top) in 10 minute time steps for the Maadam Volcano eruption in Papua New Guinea of the 30th July 2015. The time at the BOM Forecasting Centre is 1:30pm in the first row and the corresponding satellite image time stamps are shown in rows two and three. Data is presented as the Bureau (BOM) Forecaster would receive it, taking into account the time of transmission from MTSAT-2 for the greyscale data, and Himawari-8 for the True Colour RGB product data.

There is also less ambiguity in the signals and less false signals or "noise", for example when monitoring fog/low cloud development during the night as shown in Figure 5.

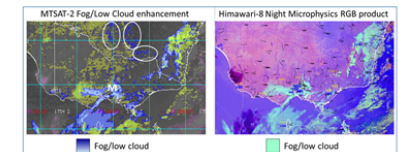


Figure 5: Comparing two products over South-Eastern Australia for 1750UTC 29th February 2015. The fog/low cloud enhancement as applied to MTSAT-1R / MTSAT-2 data (Weymouth 2006) and the Night Microphysics RGB product as applied to Himawari-8 data, with METAR cloud base (feet) in blue and visibility (meters) in yellow. The false signals in the former product are circled. Melbourne is annotated as "M".

The new information-rich products also have the added dimension of colour to visualise the extra information. This is in direct consequence of the increase from 5 to 16 bands when transitioning from MTSAT-2 to Himawari-8, permitting the generation of RGB products. Information rich images with clear meteorological and severe weather signatures permit instant detection and monitoring of "the problem of the day", giving forecasters extra confidence in identifying critical weather phenomena. Satellite champions affirmed that information rich images that reveal important meteorological features clearly are ranked

My forecasting at the Darwin RFC, publications since 2007

I have been working at the Bureau of Meteorology since 2000.

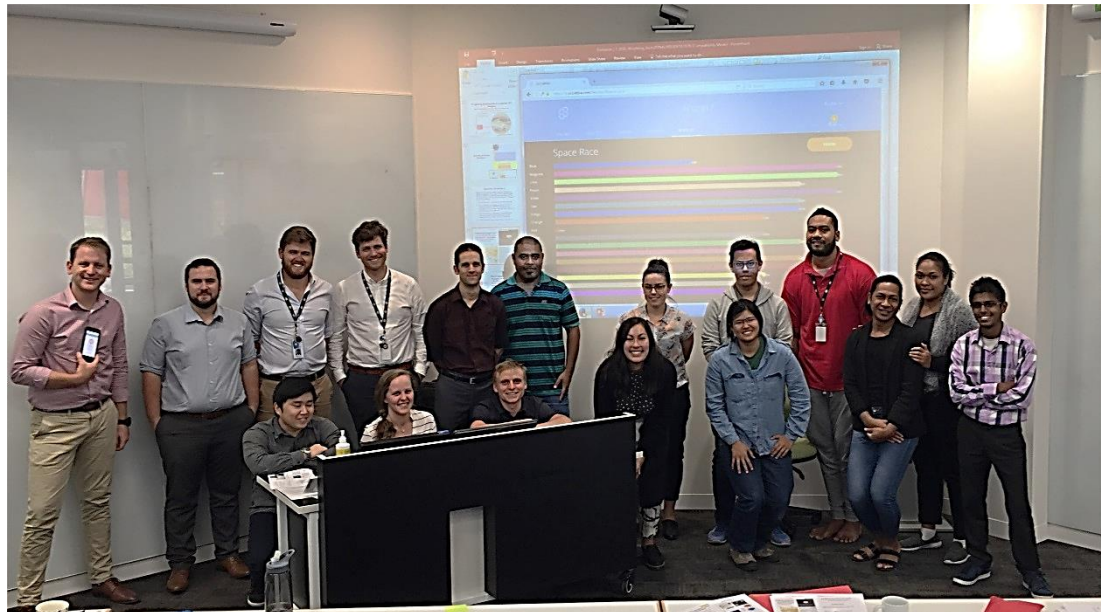
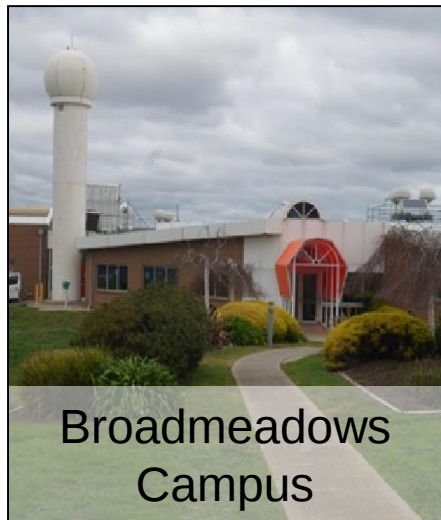
I worked as a weather forecaster in tropical Darwin for 8 years.

I commenced teaching at the Bureau of Meteorology Training Centre since 2009. The main topics of my teaching include Tropical Meteorology and Satellite Meteorology.

During this time I published two research papers pertaining to the detection of fog and low cloud during the night using geostationary satellite data. Most recently I have co-authored a research paper "How Himawari-8 has revolutionised the work of Bureau forecasters" and this has been submitted for publication. I will also summarise the results during the next session.

REFERENCE SLIDE

My work at the Bureau of Meteorology Training Centre and the Australian VLab Centre of Excellence



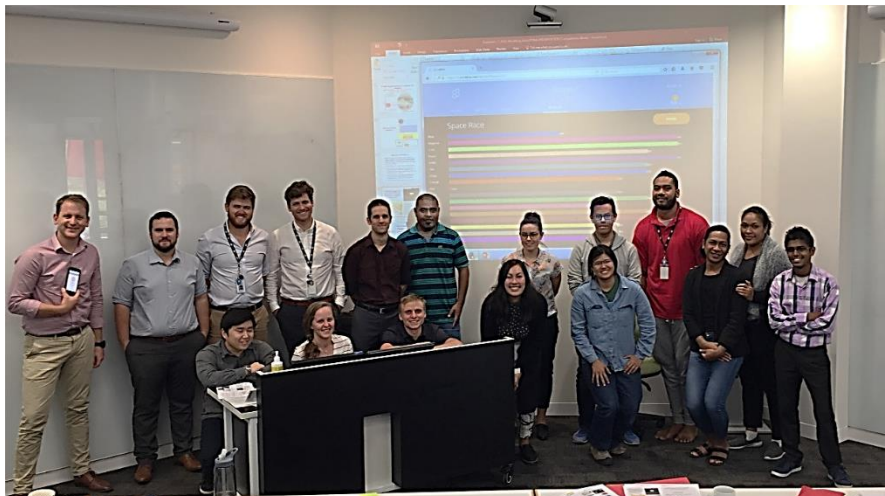
Broadmeadows Campus



Australian Government
Bureau of Meteorology

Bureau of Meteorology Training Centre, Broadmeadows Campus

Unit	Title	Dates (2018)
	Orientation	29 Jan - 2 Feb ¹
1	Foundations of Meteorological Theory	5 Feb – 29 Mar (8 weeks)
2	Synoptic Scale Meteorology and Forecasting	3 Apr – 29 May (8 weeks)
3	Mesoscale Meteorology and Forecasting	4 Jun – 3 Aug (9 weeks)
4a	<i>Bureau & international students</i> Weather Services and Procedures	6 Aug – 27 Sep (8 weeks)
4b	<i>RAN students</i> Military Meteorology and Oceanography Course	6 Aug – 5 Oct ² (8 weeks)
	Graduation	27 Sep



BMTC Grad Dip Met Class of 2018

Radiation and the Atmosphere

Radiation and the Atmosphere Lecture 1

Introduction

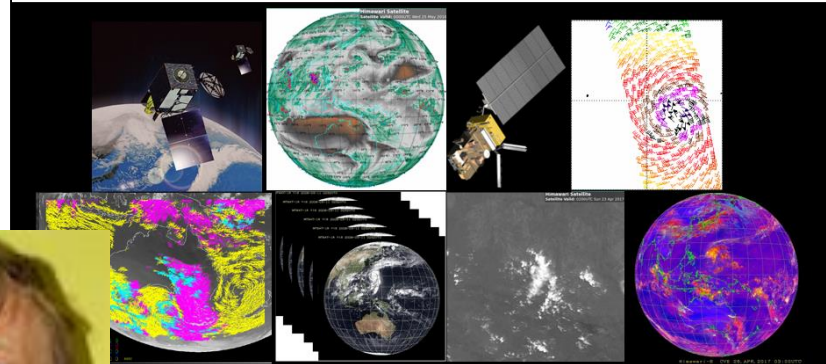
Bodo Zeschke
Bodo.zeschke@bom.gov.au
(9669) 4753
(taken over from Peter Otto)



Bodo Zeschke
Teacher, BMTC

Advanced Satellite Meteorology

Bureau of Meteorology



Bodo Zeschke
Bureau of Meteorology Training Centre
Australian VLab Centre of Excellence

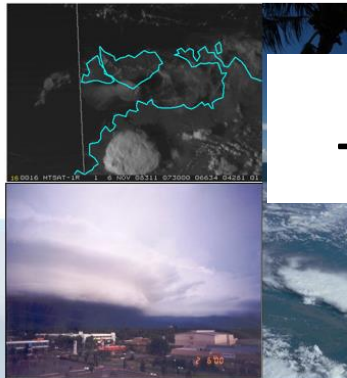


Lecture 15

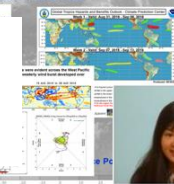
Convection I

- The various types of Tropical Convection

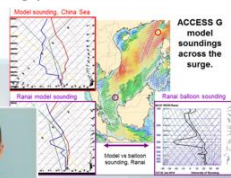
Tropical Meteorology (part)



Melbourne VLab Centre Of Excellence
VLab
Global Focus Group Weather and Forecasting
Discussion resources



The Northeast Asian Monsoon and its impact on Singapore weather and marine conditions



Tropical Familiarisation for Graduate Diploma of Meteorology Overseas Students



Tropical Meteorology for our Overseas Students

Bureau of Meteorology Training Centre, Broadmeadows Campus

Although I am based at the Bureau's head office in order to better collaborate with satellite section staff and operational forecasters, I teach at the Bureau of Meteorology Training Centre in Broadmeadows, a suburb of Melbourne. The subjects that I am currently teaching are shown in the slide

The students attending this centre study for 8 months to gain their BOM Graduate Diploma in Meteorology a national and international accredited qualification.

Students are from Australia, from the Royal Australian Navy, from other meteorological providers within Australia and from overseas (Singapore, Hong Kong, Fiji, Samoa, Vanuatu, Tonga, Kiribati etc.)

I am also involved in the activities of the Australian VLab Australia Centre of Excellence for remote training in satellite meteorology.

REFERENCE SLIDE

Bureau Himawari-8 Video on Facebook and YouTube

<https://www.youtube.com/watch?v=d-GFADBBfcA>



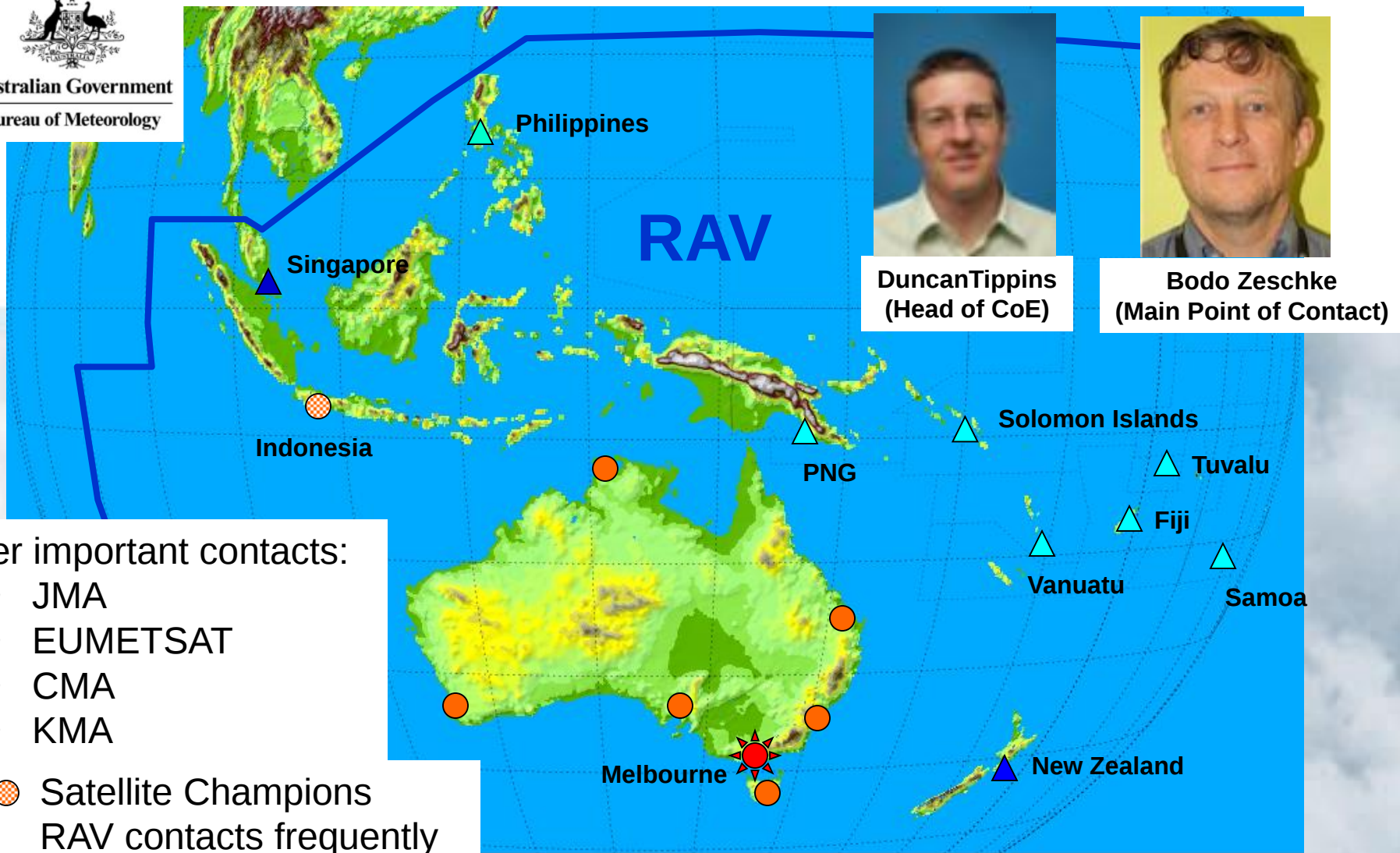
Facebook 45000+ viewings YouTube 10000+ viewings

Australian VLab Centre of Excellence and RAV contacts

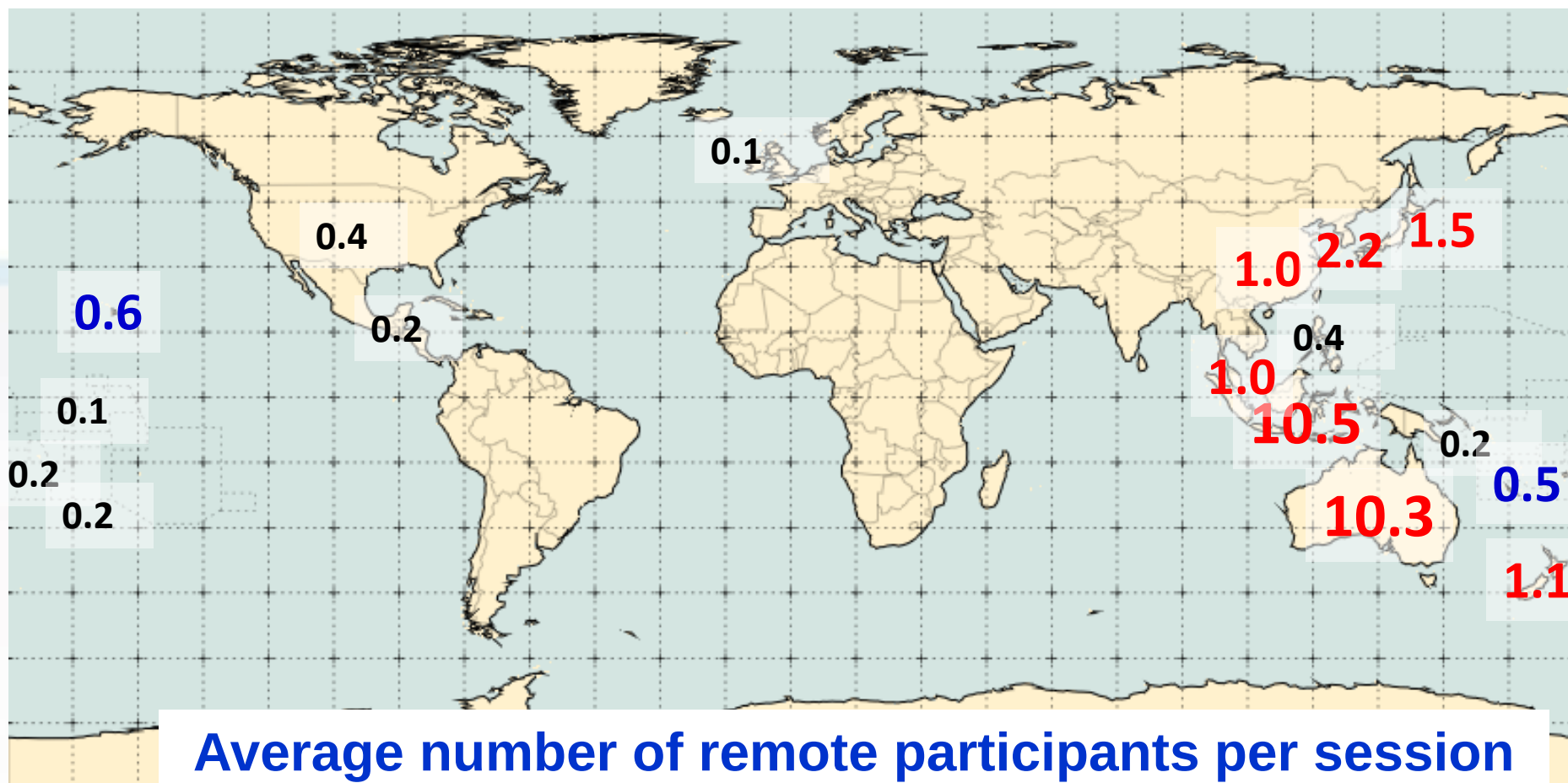
(see also <https://www.wmo-sat.info/vlab/centres-of-excellence/>)



Australian Government
Bureau of Meteorology



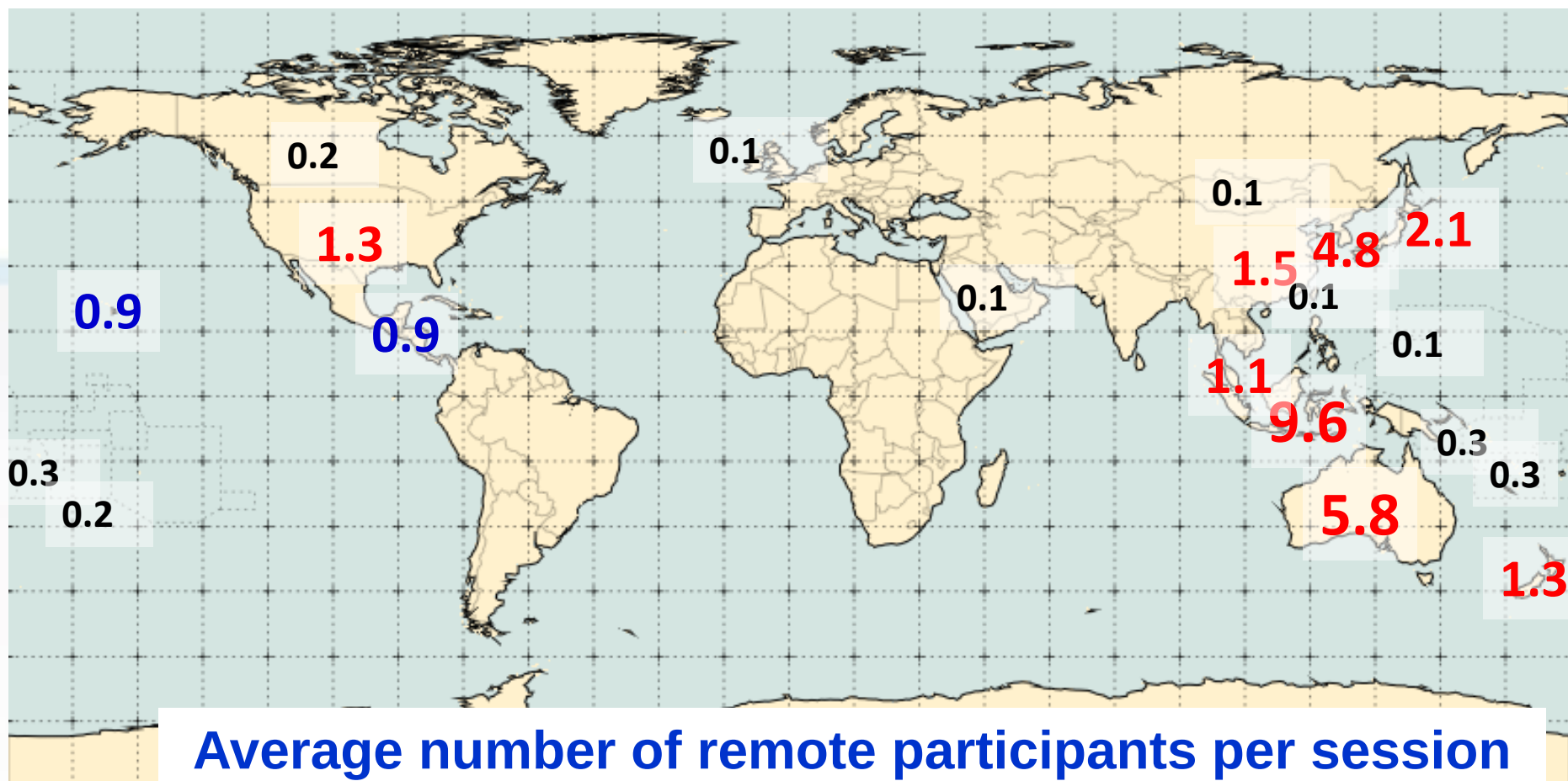
The past 4 years of Regional Focus Group meetings – statistics October 2013 to March 2018



Total number of remote stakeholders attending the 54 sessions = 1687

Average number of participants per session = 31.2

The past 1 year of Regional Focus Group meetings – statistics April 2017 to March 2018



Average number of remote participants per session

Total number of remote stakeholders attending the 12 sessions = 374

Average number of participants per session = 31.2

Monthly Regional Focus Group Meetings

(over the past two four and a half year...)

1

Broadscale Ocean and Atmosphere conditions

SST anomalies – 29 May-4 June 2017

Warmer than average SST, though cooling has occurred due to increase trade winds

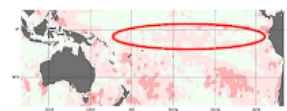


image from BOM

Southern Oscillation Index

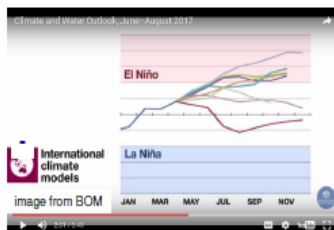


image from BOM

OLR anomalies – 30 days to 10th June

A lot of cloudiness about the Maritime Continent and Indian Ocean

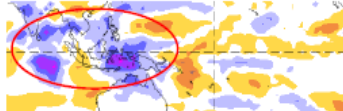


image from NOAA/ESR/PSD

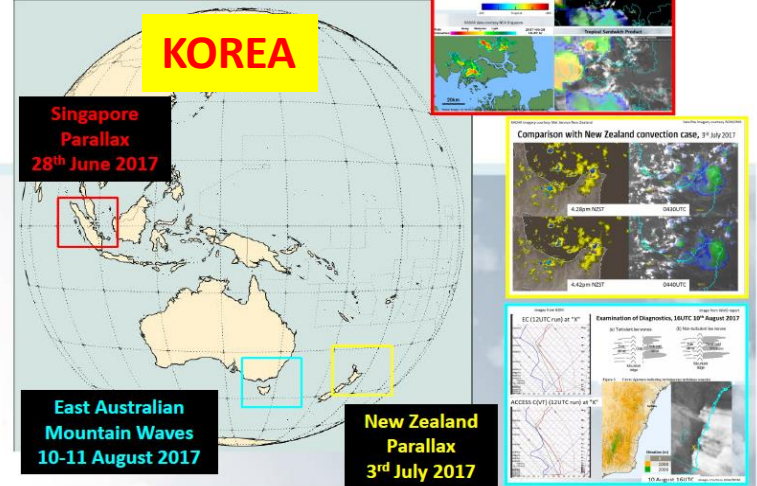
Question: what is the current situation?

- A. El Nino
- B. La Nina
- C. Neutral conditions
- D. Neutral conditions, possible El Nino trends
- E. Neutral conditions, possible La Nina trends

image from NOAA/ESR/PSD

2

Studies examined during this Regional Focus Group meeting



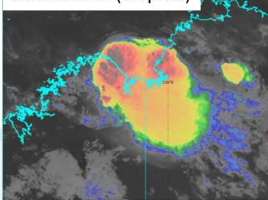
3

Summary: RGB products examined during the night time

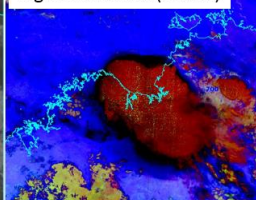
(situation at 1930UTC, 14th December)

images courtesy JMA/BOM

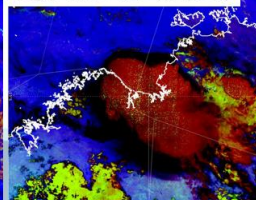
Enhanced IR (Tropical)



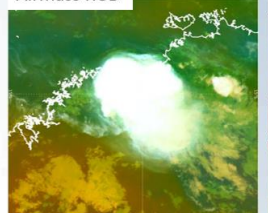
Night Micro RGB (Midlat)



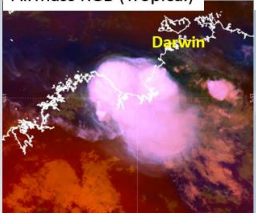
Night Micro RGB (Tropical)



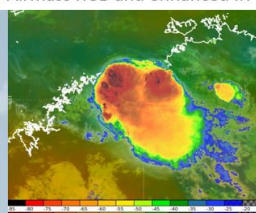
Airmass RGB



Airmass RGB (Tropical)



Airmass RGB and enhanced IR



4

KOICA, AOMSUC-7 Training Workshop and Conference



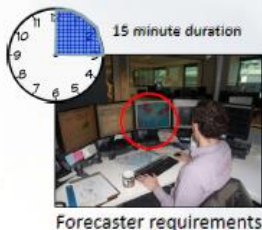
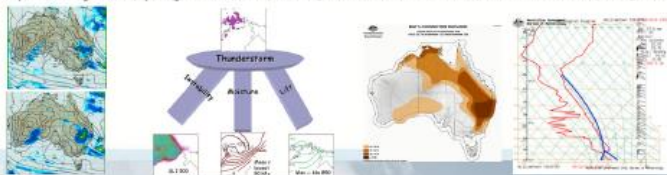
Monthly Regional Focus Group Meetings

(over the past four and a half years...)

5

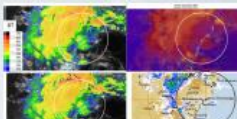
The anatomy of an "end-to-end case study"

Analysis, diagnosis, prognosis (incorporating forecast funnel, conceptual model, comparing NWP)



19010KT 9999 SCT055 BKN025
FM090200 17016KT 9999 -SHRA SCT040 SCT100
FM090200 03005KT 9999 -SHRA SCT010 BKN020
PROB30 INTER 0905/0912 4000 TSRA BKN015 BKN050CB
RMK T 22 23 20 19 Q 1012 1011 1010 1010

Products and amendments, stakeholder questions

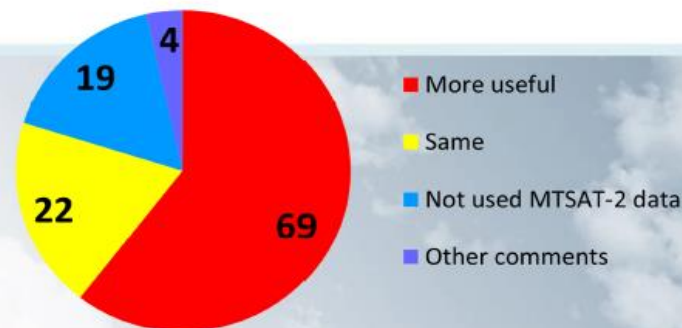


New satellite data incorporated into forecasting process.

satellite animations courtesy BOM/JMA, other images courtesy BOM

6

How has the Himawari-8 data changed the importance with which you use satellite data in relation to other data during your work at the Bureau, compared to the time when you had MTSAT-2 data?



7

Satellite Foundational Course for GOES-R (SatFC-G) Training Modules

http://rammb.cira.colostate.edu/training/visit/training_sessions/sa-tfc-g.asp

VISIT

GOES-R Boundary-forced convection

Overview

This module is part of the Satellite Foundational Course for GOES-R (SatFC-G) Training Modules. It provides an overview of the GOES-R satellite and its capabilities, focusing on the Boundary-forced convection (BFC) product. The module includes a video presentation and a series of interactive exercises designed to help users understand the BFC product and its applications in forecasting.

Learning Objectives

- Understand the GOES-R satellite and its capabilities.
- Understand the Boundary-forced convection (BFC) product.
- Understand the applications of the BFC product in forecasting.

Module Structure

- 1. Introduction to GOES-R
- 2. The Boundary-forced convection (BFC) product
- 3. Applications of the BFC product in forecasting
- 4. Summary and conclusions

Resources

- Video presentation: [GOES-R Boundary-forced convection \(BFC\) product](#)
- Interactive exercises: [GOES-R Boundary-forced convection \(BFC\) product](#)

GOES-R Boundary-forced convection

This module is part of the Satellite Foundational Course for GOES-R (SatFC-G) Training Modules. It provides an overview of the GOES-R satellite and its capabilities, focusing on the Boundary-forced convection (BFC) product. The module includes a video presentation and a series of interactive exercises designed to help users understand the BFC product and its applications in forecasting.

NOAA Satellites and Information
National Environmental Satellite, Data, and Information Service

CIRA
Coastal and Estuarine Research Institute

VISIT

SHyMet

CIMSS

GOES-R Boundary-forced convection

This module is part of the Satellite Foundational Course for GOES-R (SatFC-G) Training Modules. It provides an overview of the GOES-R satellite and its capabilities, focusing on the Boundary-forced convection (BFC) product. The module includes a video presentation and a series of interactive exercises designed to help users understand the BFC product and its applications in forecasting.

Learning Objectives

- Understand the GOES-R satellite and its capabilities.
- Understand the Boundary-forced convection (BFC) product.
- Understand the applications of the BFC product in forecasting.

Module Structure

- 1. Introduction to GOES-R
- 2. The Boundary-forced convection (BFC) product
- 3. Applications of the BFC product in forecasting
- 4. Summary and conclusions

Resources

- Video presentation: [GOES-R Boundary-forced convection \(BFC\) product](#)
- Interactive exercises: [GOES-R Boundary-forced convection \(BFC\) product](#)

GOES-R Boundary-forced convection

This module is part of the Satellite Foundational Course for GOES-R (SatFC-G) Training Modules. It provides an overview of the GOES-R satellite and its capabilities, focusing on the Boundary-forced convection (BFC) product. The module includes a video presentation and a series of interactive exercises designed to help users understand the BFC product and its applications in forecasting.

8

WMO Course for Trainers for RA-II and RA-V

2017 WMO Online Course for Trainers for RA-II and RA-V (Module 3)

You are logged in as: [Boris Zakharenko](#) (Log out)

DASHBOARD - 2017 COURSE FOR TRAINERS MODULE 3

Module 3: Learning activities and resources

How do make your training events more engaging and effective?

In module 3, you will explore topics related to developing learning resources and activities, and facilitating training.

- common learning activities and strategies
- creating learning action maps
- using case studies and simulations
- finding and using open educational resources
- visual and cognitive design
- presentation skills
- facilitating learning
- organizing training events

MODULE 3 MENU

- Home
- Pre-course Activities
- Unit 1: The Training Process
- Unit 2: Learning Needs
- Unit 3: Learning Outcomes
- Unit 4: Learning Strategies
- Unit 5: Learning Assessment
- Unit 6: Evaluation of Training
- Module 3&2 Wrap Up

MODULE 3&2 MENU

- Home
- Pre-course Activities
- Unit 1: The Training Process
- Unit 2: Learning Needs
- Unit 3: Learning Outcomes
- Unit 4: Learning Strategies
- Unit 5: Learning Assessment
- Unit 6: Evaluation of Training
- Module 3&2 Wrap Up

NAVIGATION

- Dashboard

<http://etp.wmo.int/moodle/enrol/index.php?id=124>

An overview of Australian Vlab Centre of Excellence Regional Focus Group meetings

Main topics covered:

1. Weather and Forecast discussions
2. Case studies (mid-latitude & tropical examples, utilising Himawari-8 data)
3. Individual case studies showcasing various RGB composites.
4. Presenting useful material from conferences, training and workshops (Asia-Oceania Meteorological Satellite Users Conferences, KOICA training, RGB Expert and Developers Workshop 2017)
5. Demonstrating the Forecaster Friendly End-to-End Case Study
6. Disseminating feedback from 115 Bureau forecasters pertaining to the Himawari-8 Data Use Questionnaire
7. Advertising online training resources pertaining to satellite meteorology.
8. It was as privilege to host the Regional Focus Group meeting of June 2017 as part 3 of the WMO Course for Trainers

REFERENCE SLIDE

Presentations by invited speakers April to December 2017




Improvement in the detection of snow-covered areas using natural color RGB image



Yunbok Lee, Yuha Kim, Geun-Hyeok Ryu, Hye-Sook Park



April 2017



Regional Focus Group Weather and Forecasting Discussion

Rapidly Developing Thunderstorm Detection Using Various Satellite Products

18 May 2017

Hye Sook PARK, Eun Ha Sohn, Ki Hong PARK
(hyesookpark@korea.kr)

National Meteorological Satellite Center (NMSC)
Korea Meteorological Administration (KMA)



May 2017

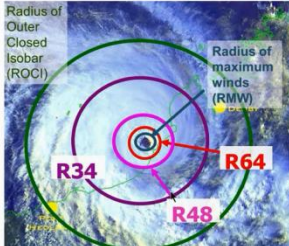


Forecasting Size Changes in Tropical Cyclones

Size forecasting: the poor cousin?

VLAB 18 July 2017

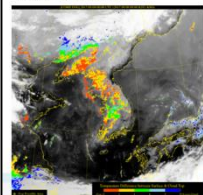
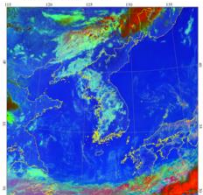
Defining TC Size/ Structure




Joe Courtney



July 2017

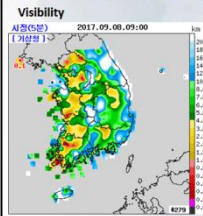
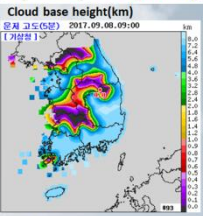



COMS fog detection

COMS fog RGB

Images courtesy Dr HyeSook Park KMA

COMS and Himawari-8 products and station observations, 00UTC 8th September 2017

Visiblity

Cloud base height(km)



Himawari-8 True Colour RGB product



September 2017



ITCZ Displacement in the event of MJO on the Maritime Continent during Asian Monsoon Period

Achmad Rifani, Mia Khushnul Khotimah, Nanda Alfuaadi
Center for Public Weather Services, BMKG

For the
Australian VLab Centre of Excellence Regional Focus Group Meeting
31 October 2017



October 2017



Satellite-based Total Cloud Cover retrieval to support automatic cloud amount measurement

Hwan-Woo Lee, Geun-Hyeok Ryu
Satellite Analysis Division, NMSC, KMA
20th December 2017 (Wed.)



December 2017



Recent Regional Focus Group meetings April to December 2017



The Australian VLab Centre of Excellence has hosted presenters from Indonesia, Korea and Australia. In particular:

KMA presented and co-contributed to four sessions. In **April 2017** Mr Yunbok Lee presented "Improvement in the detection of snow-covered areas using the Natural Colour RGB images". In **May 2017** Dr HyeSook Park presented "Rapidly developing thunderstorm detection using various satellite products". In **September** Dr HyeSook Park contributed to a presentation comparing COMS and Himawari-8 data products for the detection and nowcasting of fog and low cloud over the Korean peninsula. In **December 2017** Dr. Geun-Hyeok Ryu presented "Satellite-based Total Cloud Cover retrieval to support automatic cloud amount measurement:

During **July 2017** Mr Joe Courtney of the Bureau of Meteorology presented "Forecasting Size Changes in Tropical Cyclones".

During **October 2017** Mr. Achmad Rifani presented "ITCZ Displacement in the event of MJO on the Maritime Continent during Asian Monsoon Period"

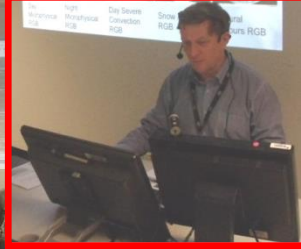
REFERENCE SLIDE

Student participation within our Regional Focus Group Discussions

Presenter / Main Coordinator

Presentations
by guests

Graduate
Diploma of
Meteorology
Class



Webinar software

Remote audience



Remote audience



Remote audience



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



HomeSatellite ProductsEventsTrainingBlogNewsArchiveLinksContact Us

Search

Home > Archive > Regional Focus Group Recordings

Home

Satellite Products

Events

Training

Blog

News

Archive

Science Week 2013

Aviation Week 2012

Aviation Week 2011

Regional Focus Group Recordings

Links

Contact Us

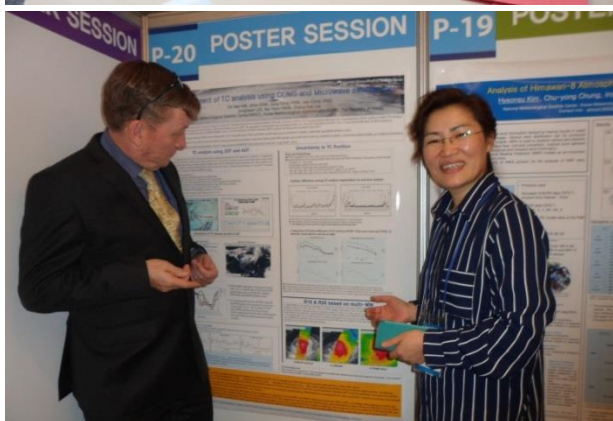
Quick Links

- Upcoming Events **UPDATED**
- WMO VLab Homepage
- Melbourne CoE ISOBAR login
- Join a Webinar
- Contact Us

Regional Focus Group Discussion Recordings

Recordings of Australian VLab Centre of Excellence Regional Focus Group (RFG) meetings 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").

Recordings (file size)	Content of the Regional Focus Group meetings
	The next joint Australia Korea VLab Centres of Excellence Regional Focus Group meeting is scheduled for mid-late January 2018 Additional information will be provided closer to the event
20th December 2017 Regional Focus Group meeting Topics of discussion include: Satellite-based Total Cloud cover retrieval to support automatic cloud cover measurements (Dr Geun-Hyeok Ryu / Satellite Analysis Division, NMSC, Korea Meteorological Administration) 31 minutes duration (26Mb .wmv file) (50Mb .mp4 file) An Australian Squall Line case study: applying some RGB products from the RGB Expert and Developers Workshop (Bodo Zeschke BMTC) 24 minutes duration (52Mb .wmv file) (73Mb .mp4 file) Please download the following animations prior to the session: Animation 1 (41Mb) Animation 2 (21Mb) Animation 3 (18Mb)	



KOICA / 2nd KMA Meteorological Satellite Users Conference

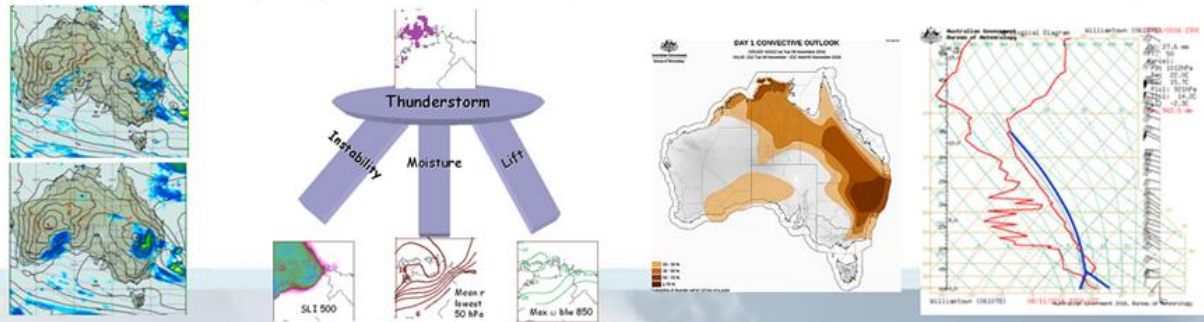


End-to-End Forecaster Friendly Case Study incorporating Himawari-8 data

December 2016 Regional Focus Group meeting recording at <http://www.virtuallab.bom.gov.au/archive/regional-focus-group-recordings/>

The anatomy of an "end-to-end case study"

Analysis, diagnosis, prognosis (incorporating forecast funnel, conceptual model, comparing NWP)



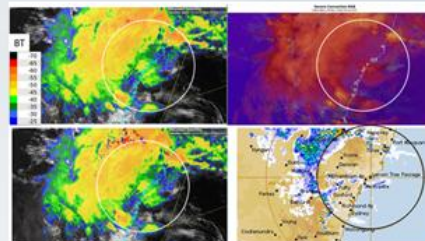
15 minute duration



Forecaster requirements

TAF YWLM 0900/0912
19010KT 9999 SCT015 BKN025
FM090200 17016KT 9999 -SHRA SCT040 SCT100
FM090800 03005KT 9999 -SHRA SCT010 BKN020
PROB30 INTER 0903/0912 4000 TSRA BKN015 BKN050CB
RMK T 22 23 20 19 Q 1012 1011 1010 1010

Products and
amendments,
stakeholder
questions



New satellite data
incorporated into
forecasting
process.

satellite animations courtesy BOM/JMA, other images courtesy BOM

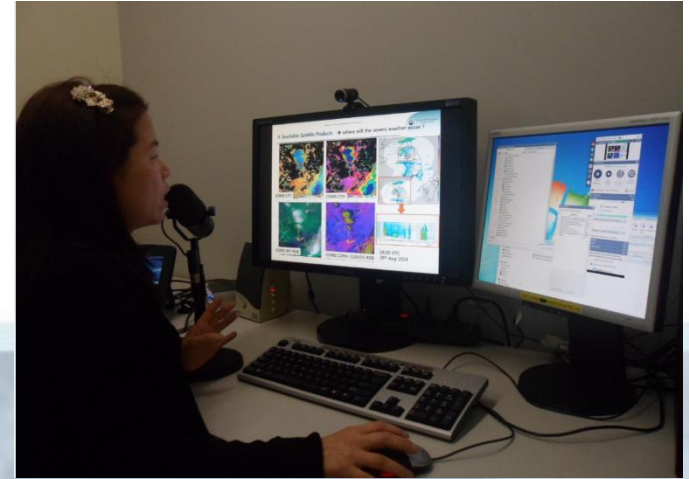
Visit of KMA VLab Centre of Excellence Point of Contact Dr HyeSook Park to BOM Australia, 13-20th May 2017



Head Office



Discussions with BOM staff



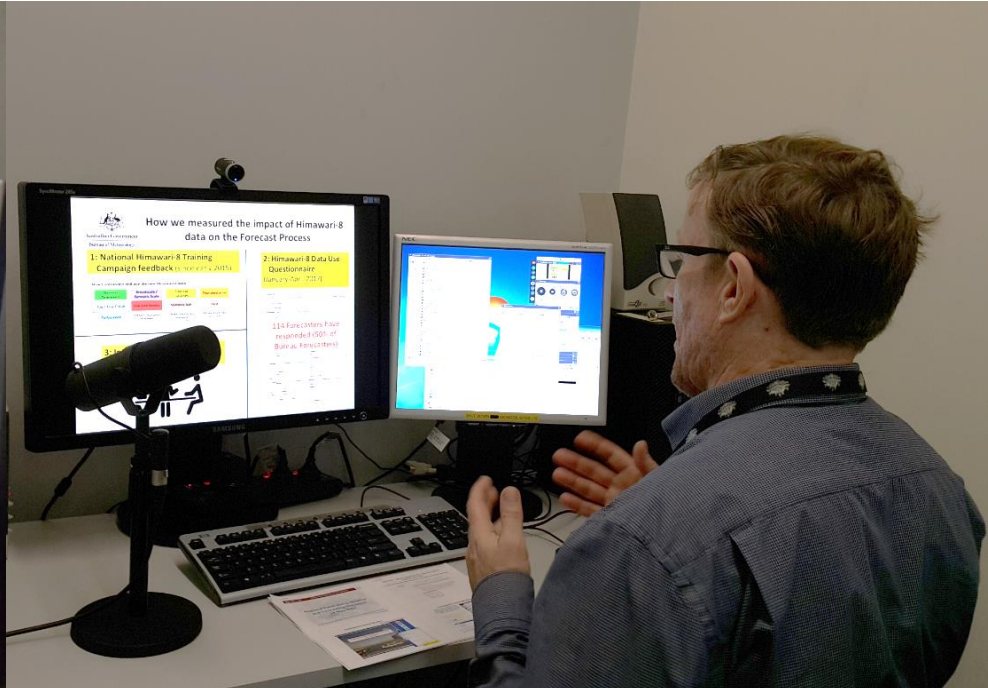
Regional Focus Group meeting



Broadmeadows
Campus

Collaboration in classroom activities






**Australian Government
Bureau of Meteorology**

Melbourne VLab Centre Of Excellence





**Regional Focus Group Weather
and Forecasting Discussion
18 May 2017**

Bodo Zeschke Australian VLab Centre of Excellence Point of Contact



**Joint Australia / Korea VLab
Centres of Excellence
Regional Focus Group
meeting May 2017**

Visit of KMA VLab Centre of Excellence Point of Contact Dr HyeSook Park to BOM Australia, 13-20th May 2017

The visit from the KMA VLab Centre of Excellence Point of Contact Dr HyeSook Park constituted a step in the implementation of cooperative activities between BOM-KMA, as outlined in the 'Summary Report of the Eighth Session of the Joint Working Group between BOM and KMA'.

The object of this was to progress collaboration on the next generation of satellites, in terms of data analysis and training strategies.

Joint activities included:

- Collaborating on the BMTC Grad Dip Met Advanced Satellite Meteorology course. We tested the "End-to-End Forecaster Friendly Case Studies" that we have developed with feedback from the 2017 BMTC Graduate Diploma of Meteorology students.
- Discussions with Met training staff around teaching strategies for new generation of satellites; capabilities leading to competency requirements in terms of disaster mitigation (TS, TC, Fire)
- Discussions with forecasting staff around utilization of Himawari-8 data at BOM and KMA
- Co-facilitation of the May WMO Virtual Laboratory (VLab) Regional Focus Group meeting

REFERENCE SLIDE

A summary of the presentations

	30 th May	31 st May	1 st June
9:30~11:30 am (2 hours)	1. Introduction Session 2. How Himawari-8 data has revolutionised the work of Bureau forecasters	4. Convective rainfall prediction, nowcasting, short term forecasting	6. Water vapour channel interpretation, including Airmass and Water Vapour RGB composites. 7. Using satellite data to monitor upper atmosphere PV anomalies (part 1)
Lunch			
13:30~17:00 (3.5 hours)	3. The detection and monitoring of fog using Himawari-8 and COMS satellite data, with sea fog case studies	5. Detection and monitoring of convection including the use of convection detection algorithms.	8. Using satellite data to monitor upper atmosphere PV anomalies (part 2) 9. Verification of NWP forecasts using satellite data



AOMSUC-8 Training Event : introducing Socrative



Get Account Apps Resources STUDENT LOGIN TEACHER LOGIN

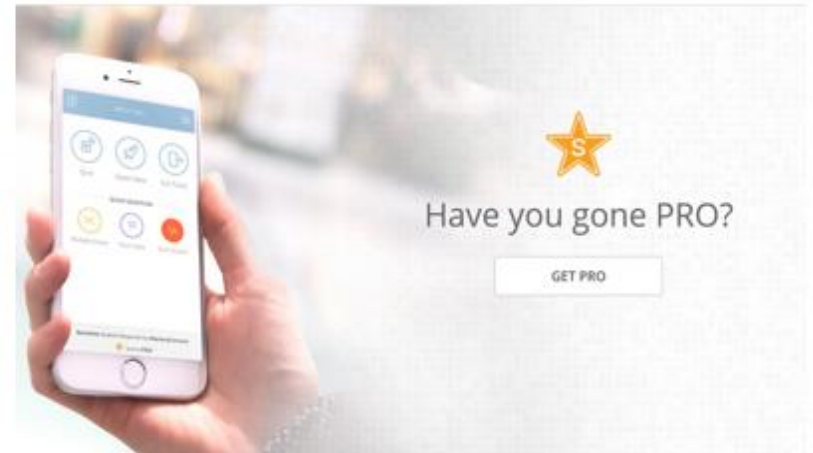


photo courtesy Elena Bakanas

Socrative cloud-based student response system

This cloud-based student response system was developed by Boston-based graduate school students.

I first became aware of the Socrative cloud-based student response system whilst attending CALMET 2017.

I have used this in collaboration with Dr Mark Higgins from EUMETSAT whilst hosting a teaching session during AOMSUC-8

Socrative has also been used whilst teaching the Radiation, Basic Satellite Meteorology and Tropical Meteorology subjects at the Bureau of Meteorology Training Centre (BMTC) during 2018.

I am keen to show KMA staff the use of this software during teaching..

Attendees can access the questions posed during the sessions using their smartphones or a PC. The identity of the participants to the questions is completely anonymous, though collective results can be seen by all

REFERENCE SLIDE

AOMSUC-8 Training Event : introducing Socrative

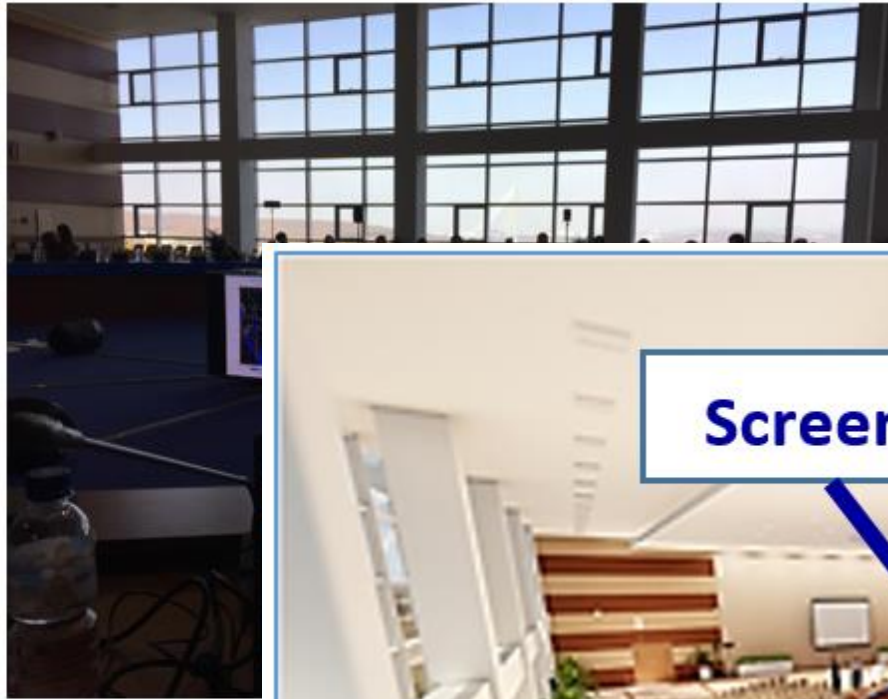
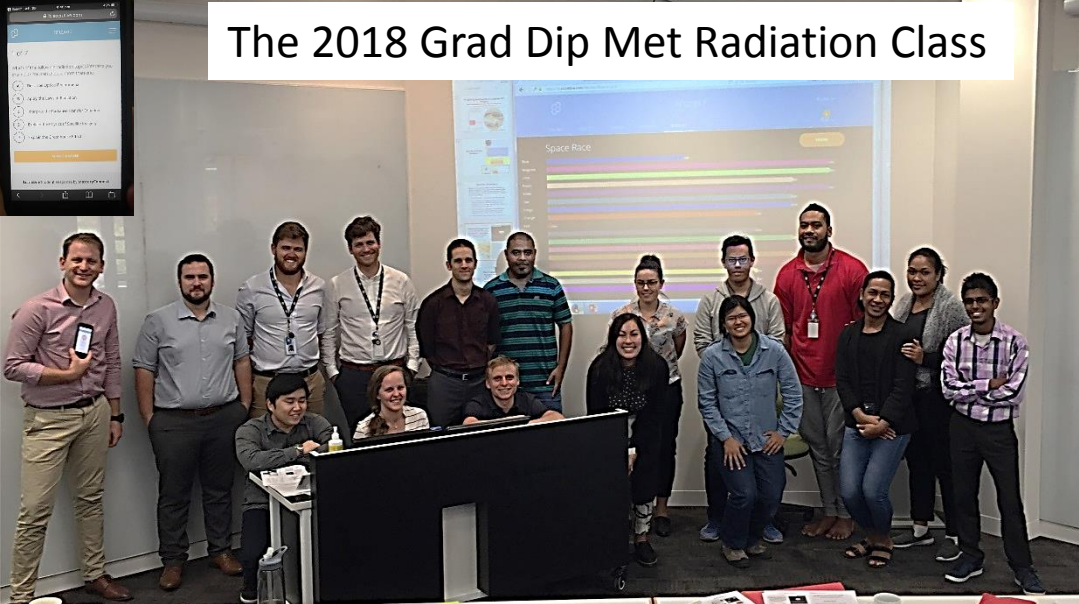


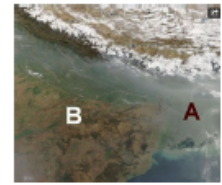
photo courtesy Elena Bakanas

The 2018 Grad Dip Met Radiation Class



9. Consider the recent MODIS True Colour visible imagery over India and Bangladesh. Which of the following is true?

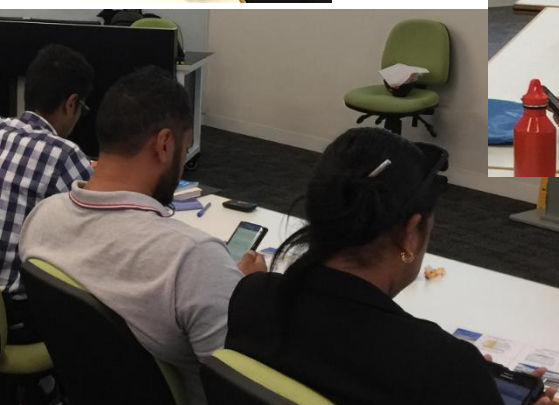
- 1/18 ☐ A The Aerosol Optical Depth is much greater in area A than area B. Therefore the low level visibility is much better at A.
- 15/18 ☐ B The Aerosol Optical Depth is much greater in area A than area B. Low level visibility is much better at B.
- 0/18 ☐ C The Aerosol Optical Depth is much greater in area B than area A. Low level visibility is much better at B.
- 1/18 ☐ D The Aerosol Optical Depth is low at areas A and B with good visibility at both locations.



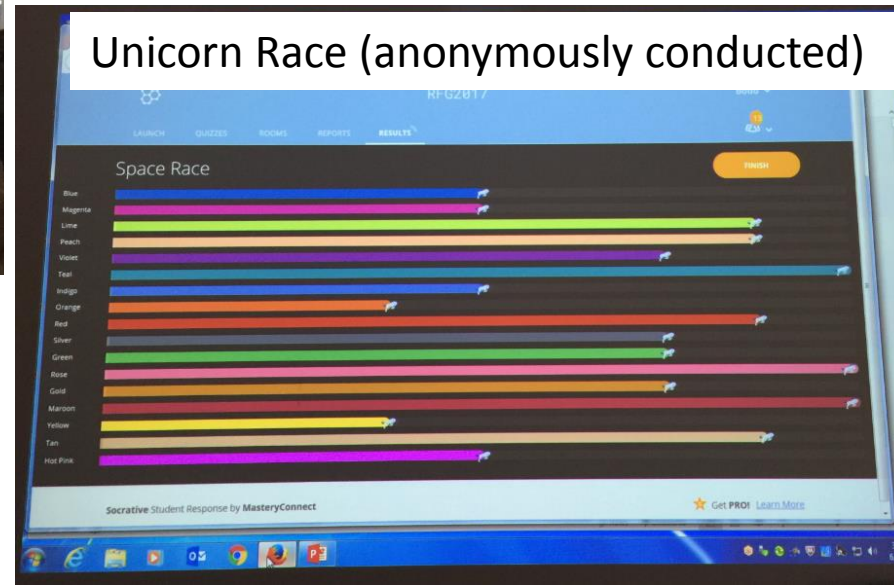
Multiple choice question



Using Socrative at BMTC



Unicorn Race (anonymously conducted)



Quizzes throughout the session

Setting up the Socrative Interactive Software

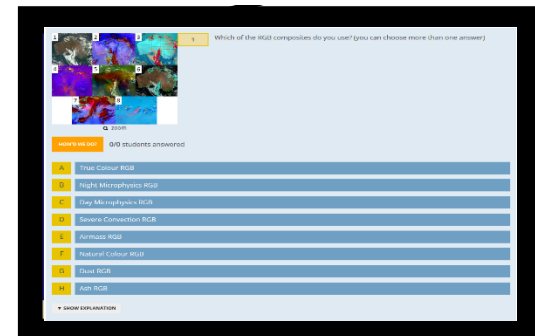
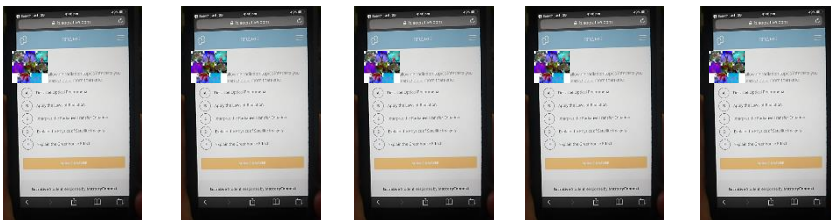
1: Teacher composes questions and enters these into a Socrative Quiz



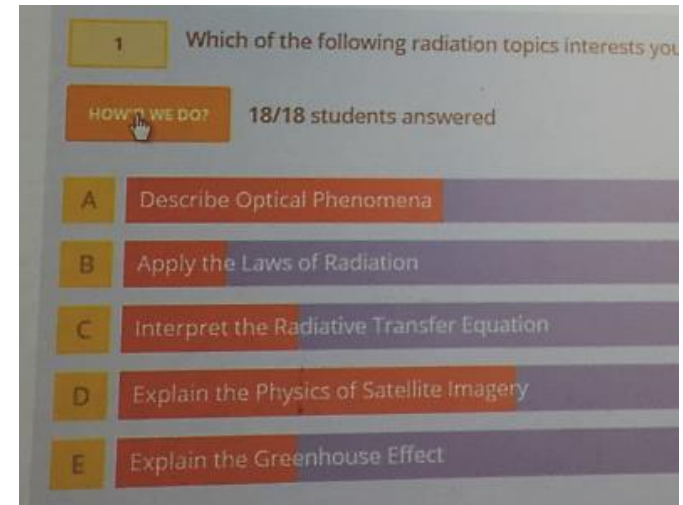
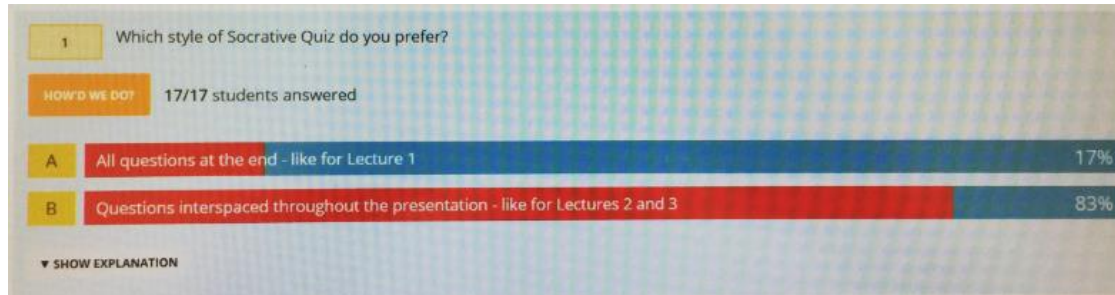
2: Teacher starts the Socrative Quiz



3: Attendees log into the Socrative Quiz
b.socrative.com web address
log in as "student"
Enter the classroom **RFG2017**



Types of Socrative Quiz and Space Race Question



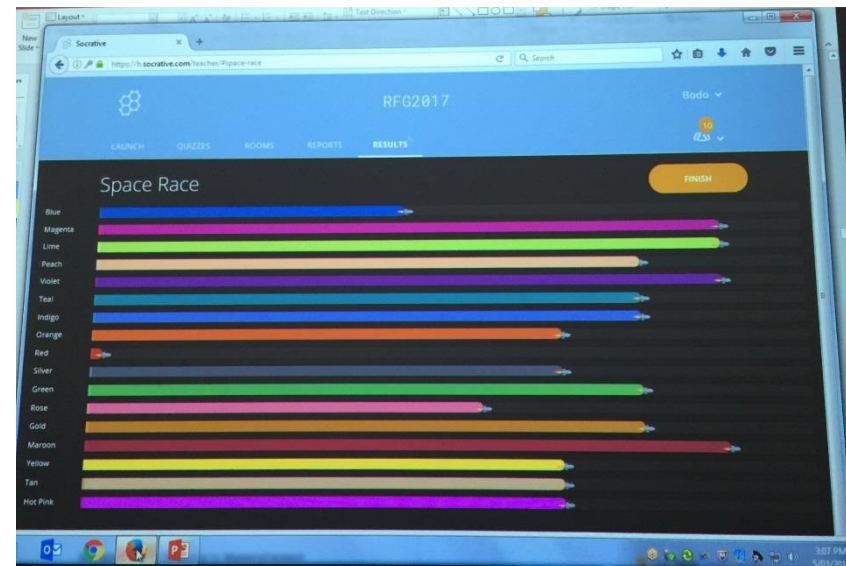
Multiple choice / True False Questions

Questions can be organised into a "Race"



For the "Space Race" in part 2, what icon would you like

	Rocket	2/18	(A) Rocket
	Bear	3/18	(B) Bear
	Bee	1/18	(C) Bee
	Bicycle	3/18	(D) Bicycle
	Spaceship	3/18	(E) Spaceship
	Unicorn	6/18	(F) Unicorn



Reports of the Sessions for further analysis

3. Which layer of the atmosphere does most of the weather occur? Choose the one best answer.

- 0/18 ☐ A Thermosphere
- 0/18 ☐ B Stratopause
- 0/18 ☐ C Mesosphere
- 15/18 ☒ D Troposphere
- 1/18 ☐ E Stratosphere
- 0/18 ☐ F Tropopause

Right /wrong type

☒ 1. Did you like using Socrative during the Radiation lectures, the Trial Exam session and during the Basic Satellite Meteorology revision session?

- 15/17 ☐ A Enjoyed it very much
- 2/17 ☐ B Enjoyed it
- 0/17 ☐ C It was ok
- 0/17 ☐ D I did not like it
- 0/17 ☐ E I really did not like it

Survey type

Socratic Quiz during this session

1 On your computer or iphone open up a new window in your browser type in **b.socrative.com** choose "**Student login**" Then Room Name "**RFG2017**" Answer questions

2

#1 EDIT

Have you used Socrative or a similar cloud based student response system?

ANSWER CHOICE

A I have used Socrative or a similar online quiz with students using a smartphone to interact

B I have not used Socrative or a similar online quiz within the class

C I am interested to know more about this

D I don't like students to use their smartphones during class

E I do not teach

3

Answer the question

SUBMIT ANSWER

4

Finished!

Score: 0/1

Percent: 0%

OK

5



You've completed the current activity.
Waiting for the next activity to begin...

Socrative question 1: Which of the topics interests you the most? You can choose more than one

- A. How Himawari-8 data has revolutionised the work of Bureau Forecasters
- B. The detection and monitoring of fog using Himawari-8 and COMS satellite data, with sea fog case studies
- C. Convective rainfall prediction, nowcasting and short term forecasting
- D. Detection and monitoring of convection using Himawari-8 and COMS satellite data, including the use of convection detection algorithms.
- E. Himawari-8 water vapour channel interpretation, including associated Airmass and Water Vapour RGB composites.
- F. Using Himawari-8 and COMS data to monitor upper atmosphere PV anomalies and their relationship to cyclogenesis
- G. Verification of NWP models using Himawari-8 satellite data.

Summary of the session

- Introduced myself
- Advertised the strong collaboration between the Australian and Korea VLab Centres of Excellence
- Introduced the content of the next three days
- Introduced Socrative and asked attendees to log into the session.
- Worked through a short Socrative introductory quiz