



45th Global Monitoring Annual Conference

Boulder, Colorado

May 23-24, 2017





Housekeeping



- Poster session, 5:00-8:00 pm today!
 - Posters are being collected at the registration table. Poster tubes stored in the "hallway" on the left of the stage.
- Agendas are available at the desk and are posted outside the room and behind the food table.
 - We have memory sticks with the full pdf set of abstracts available to borrow.
 - For those without e-access, we do have some printed abstract booklets available as well. Please ask Julie.
- A few printed abstract books are kept at the desk for quick reference.
 - Wireless access throughout the building
 - DSRC connection
 - Username: gmac
 - Password: noaagmac
- Work space during meeting
 - Cafeteria & Classroom
 - Side meeting space – contact organizers.
- Lunches Delivered here.
 - Sign up and pay at the registration table.
 - Drop-dead time is morning break.
- Toilets, fire alarm, etc.
- Silence your phones.
- Coffee and food in hall during breaks.
 - Water available in room during talks.
- All plates, cups, utensils compostable.
- Side conversations in the hallway . . .
- NOAA Gift Shop
 - 12:00-1:00, 4:45-5:15 daily
 - Cash or check only.
- Thank you to our local vendors!
- Questions – see our wonderful staff.



The 2017 GMAC... by the numbers



Attendance – “In the room”

- 210+ Attendees
 - 47 International guests
 - 17 Nations
 - 6 Continents
 - 19 International agencies & organizations
 - 8 International universities
 - 3 International private sector companies
 - 20 U.S. agencies & programs
 - 17 U.S. universities
 - 13 Private sector companies

Contributing Authors

- 120 Presentations
 - 120 Lead authors
 - and-
 - 479 “unique” co-authors

Representing:

- 42 U.S. agencies & labs
- 25 U.S. universities
- 22 Countries
- 50 International organizations
- 19 International universities



China



Canada



United Kingdom



Cape Verde



Taiwan



India



Hungary



Greece



Australia



United States



Vietnam



Netherlands



Italy



Switzerland



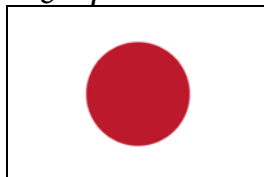
Brazil



Germany



Korea



Japan



France



New Zealand



**NOAA ESRL Global Monitoring Annual
Conference
May 23-24, 2017
Boulder, CO**

AGENDA

MONDAY, MARCH 16, 1987

1987 GMCC annual Meeting
Room 620, Building RL-3
3100 Marine Street, Boulder, CO

1230 Registration
1300 Introduction J. Peterson/GMCC

ARCTIC GAS & AEROSOL SAMPLING PROJECT (AGASP)

1310 AGASP-II Overview R. Schnell/CIRES
1330 AGASP-II Meteorology and Aerosols G. Wernbert/GMCC
1400 Measurements of Aerosol Black Carbon H. Bridgman/CIRES
1420 Size Distributions for Volatile and T. Hansen/LBL
Refractory Aerosol During AGASP T. Clark/U. Hawaii
1440 AGASP-II Radiation Studies F. Valero/NASA Ames

1500 BREAK

SOLAR RADIATION

1530 GMCC Solar Radiation, Lidar, and Ozone- J. DeLuisi/GMCC
Umkehr Measurements
1600 Long-Term Solar Radiation Measurements J. Palmer/U. Arizona
at Mauna Loa
1620 U.S. Solar Radiation Network D. Nelson/GMCC
1640 Distribution of Soot Pollution in Snow S. Warren/U. Washington
Near South Pole Station and its Influence
on Albedo

AGENDA

WEDNESDAY, MARCH 18, 1987

1987 GMCC ANNUAL MEETING
Room 620, Building RL-3
30th & Marine Street, Boulder, Colorado

AEROSOLS

0810 Mauna Loa Aerosol Backscatter Inter- D. Bowdle/U. Alabama
comparison Experiment
0830 GMCC Aerosol Program B. Bodhaine/GMCC
0850 Stratospheric Aerosol Measurements by Lidar T. McNice/NOAA-WPL
at Boulder
0910 Monitoring Atmospheric Aerosols Over the C. R. Rao/NOAA-NESDIS
Oceans with AVHRR Data From NOAA Satellites
0930 Submicron Size Particles Collected at R. Witkowski/U. Pitts-
South Pole burgh

0950 BREAK

PRECIPITATION CHEMISTRY

1015 Airborne Sulfur Measurements From the J. Boatman/GMCC
NOAA King Air
1035 Preliminary Observations From CURTAIN C. VanValin/GMCC
1055 Precipitation Chemistry Monitoring at R. Artz/NOAA-ARL
GMCC Observatories
1115 Effect of Different Shipping Methods on G. Stensland/
Hawaiian Precipitation Chemistry Ill. Water Survey
1135 Dust Emission Inventory for the U.S.: D. Gillette/GMCC
Application to NADP Needs

1155 ADJOURN

GMCC
Annual
Meeting
1987

(External
Meeting)

AGENDA

TUESDAY, MARCH 17, 1987

1987 GMCC ANNUAL MEETING
Room 620, Building RL-3
30th and Marine Street, Boulder, Colorado

TRACE GASES

0800 Measurements of Total Ozone and Aerosol G. M. Shaw/AES Canada
Optical Thickness at Mauna Loa, 1983-1987
0820 GMCC Methane Measurements P. Steele/CIRES
0840 NBS/NOAA Mutual Interests in Calibration W. Dorko/NBS
Gases for Trace Species
0900 NCAR's Trends in Atmospheric Constituents L. Heidt/NCAR
Study
0920 Lifetimes and Emissions of Halocarbons: A. Khalil/OGC
A Global Mass Balance Analysis
0940 GMCC Measurements of CFC-11, CFC-12, N₂O, J. Elkins/GMCC
CCl₄, and CH₃CCl₃

1000 BREAK

1030 Conceptual Design for a Global Trace Gas D. Johnson/Battelle PNL
Monitoring Network Using Fourier Transform
Spectrometry
1050 Tropospheric Ozone Measurements at the S. Oltmans/GMCC
GMCC Observatories
1110 Ozone and Aerosol Measurements in the D. Hoffman/U. Wyoming
Antarctic Vortex During Spring 1986
1130 Total Ozone and Ozone-sonde Observations W. Komhyr/GMCC
at South Pole During 1986

1150 LUNCH

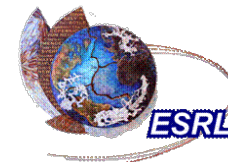
CARBON DIOXIDE

1300 GMCC CO₂ Measurements T. Conway/GMCC
1320 Error Analysis of CO₂ Flask Sampling and Data Digital Filtering K. Thoning/CIRES
1340 Recent Carbon Dioxide Releases from Fuel R. Rotty/U. New
Combustion and Other Industrial Sources Orleans
1400 Global Sources and Sinks of CO₂ Derived P. Tans/CIRES
From the GMCC Flask Data
1420 Del-¹³C in CO₂ and CH₄ I. Friedman/U.S.G.S.
1440 Trace Gas Signatures of ENSO Events in R. Gammon/NOAA-PMEL
the North Pacific

1500 BREAK

GENERAL SUBJECTS

1530 Cooperative Flask Sampling Programs at N. Trivett/AES Canada
Alert, N.W.T.
1550 Progress at Cape Grim Baseline Observatory G. Ayers/CSIRO Australia
1610 Chernobyl Radioactivity Measurements at R. Larson/DOE-EML
Barrow and Mauna Loa
1630 GMCC Air Mass Trajectory Program J. Harris/GMCC
1650 3-D Mesoscale Model Development E. Nickerson/GMCC



Chairman: B.G. Mendonca

0800 Opening Remarks J. Peterson

I. GMCC Observatories: 1986 Review

0810 Year Review MLO E. Robinson
 0840 Discussion - Questions and Answers
 Observatory Programs
 0850 Year Review BRW D. Endres
 0910 Discussion - Questions and Answers
 Observatory Programs
 0920 Year Review SMO S. Ryan
 0940 Discussion - Questions and Answers
 Observatory Programs
 0950 Year Review SPO C. Wilson
 1010 Discussion - Questions and Answers
 Observatory Programs
 1020 Break

GMCC
 Annual Meeting
 1987

(Internal Meeting)

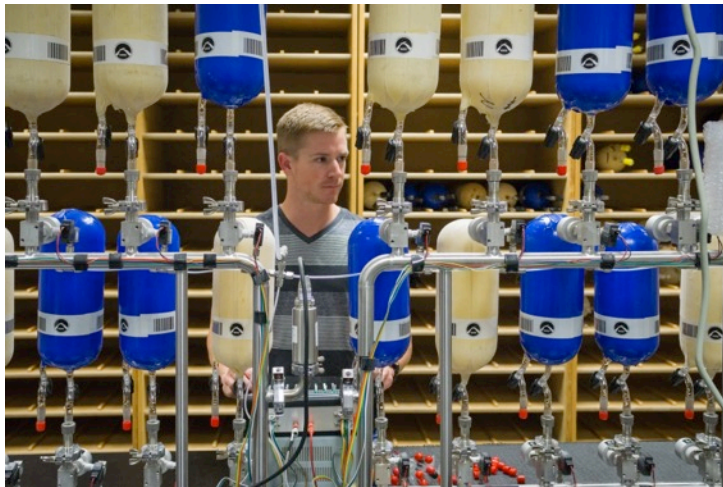
II. Overview and Discussion - Select Programs:
 Instrumentation, Present GMCC Operations,
 and Measurement Protocol

		1410	CO2 & Methane Flask Sampling: Shipboard Flask Sampling GMCC Global CO2 Network GMCC Global CH4 Network	L. Waterman E. DeMoney <u>P. Lang</u>	
1040	Turbidity	P. Reddy	1440	Research Opportunities - King Air	D. Wellman L. GUNTHER Corana
1100	Acid Rain - GMCC Obs.	R. Artz	1500	Break	
1115	Lidar	T. DeFoor			
1135	Lunch				
1300	Ozone: Automated Dobsons Ozonesondes	B. Evans P. Franchois	1520	Present Status GMCC Data Base: Collection, Archiving, Final Data Sets Round Table Discussion	J. Peterson
1330	Gas Chromatographs: N2O Current GC System Automation of Flasks CH4 GC	<u>J. Butler</u> I. Thompson K. Egan P. Steele	1600	Closing Remarks and GMCC Overview	J. Peterson

III. GMCC Data Dissemination and Archiving

GMAC Oral Sessions

- Tuesday
 - Carbon Cycle and Greenhouse Gases
 - Global Observations
 - Global Radiation
 - Carbon Cycle and Greenhouse Gases
 - Isotopes
 - (Posters)



- Wednesday
 - Carbon Cycle and Greenhouse Gases
 - Methane & Carbon Monoxide
 - Ozone, Water Vapor & Aerosols
 - Halocarbons & Other Trace Gases
 - Carbon Cycle and Greenhouse Gases
 - Remote Sensing



Poster Session

- Arctic Monitoring (P1 – P6)
- Aerosols (P7 – P11)
- Carbon Cycle and GHGs
 - Methane and Carbon Monoxide (P12 – P16)
 - Measurements and Networks (P17 – 23)
 - Modeling and Emissions (P24 – P33)
- Halocarbons (P34 – P38)
- Instrumentation – Lab & Field (P39 – P47)
- Ozone and Water Vapor (P48 – P57)
- Radiation (P58 – P60)
- Partner Stations & Meteorology (P60 – P68)

Opening Speakers



- **Keynote** – Richard Alley, The Pennsylvania State University, Department of Geosciences
 - *Climate, Melting Ice and Rising Seas: Observing and Understanding to Reduce Risks*



- Ed Dlugokencky, Global Monitoring Division, NOAA, Earth System Research Laboratory
 - *Implications of the Continued Increase in Atmospheric Methane Burden*



- Fabienne Reisen, CSIRO, Oceans and Atmosphere, Aspendale, Australia
 - *Black Carbon Measurements at Cape Grim, Tasmania*



- Dan Jaffe, University of Washington, College of the Environment
 - *Ozone, Aerosol and Carbon Gases at the Mt. Bachelor Observatory*



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 - *Implications of the Continued Increase in Atmospheric Methane Burden*
- Fabienne Reisen, Commonwealth Scientific and Industrial Research Organisation (CSIRO)
 - *Black Carbon Measurements at Cape Grim, Tasmania*
- Dan Jaffee, University of Washington
 - *Ozone, Aerosol and Carbon Gases at the Mt. Bachelor Observatory*



Thank you all for coming!

- We look forward to an invigorating 45th Annual Meeting . . .



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Keynote Speaker

Dr. Richard Alley
*The Pennsylvania
State University*





Keynote Speaker

Dr. Richard Alley

Pennsylvania State University

- 2005 – Seligman Crystal, International Glaciological Society
- 2005 – Louis Agassiz Medal (First recipient)
- 2007 – Co-Chair, Ch. 4 (Glaciology) of IPCC AR4 (Nobel Prize)
- 2008 – National Academy of Sciences
- 2010 – American Academy of Arts and Sciences
- 2011 – Heinz Award
- 2014 – “Friend of the Planet” (with Michael Mann), Nat’l Center for Science Education
- 2014 – “Frontiers of Knowledge Award”, BBVA Foundation
- 2014 – Foreign Member of the Royal Society