



TORERO DATA MANAGEMENT UPDATE



**Linda Echo-Hawk, Steve Williams,
and Janine Aquino**

**NCAR Earth Observing Laboratory (EOL)
Computing, Data, and Software Facility (CDS)
Boulder, Colorado**

**TORERO Workshop
NCAR/EOL Atrium, Boulder, CO
24-25 June 2014**



EOL support sponsored by



TORERO Data Management Web Site at NCAR/EOL



January 15, 2012 to February 26, 2012 Project Location: Costa Rica; Chile

What's New?:

Coming Soon: The 3rd Annual TORERO Workshop will be held from 24-25 June 2014 in Boulder, CO. Please reserve the date in your calendar. Please go to the [Workshop Information Site](#) for registration and details about the location, including logistics information regarding hotels. NOTE: The group rates for hotels listed on the "logistics" page are only good and guaranteed until June 2nd.

Project Description:

SCIENTIFIC OBJECTIVE

The scientific objective of the TORERO project was to study the release, transport and fate of reactive halogen gases and oxidized VOCs, and their effect on the atmospheric oxidation capacity in the Eastern Tropical Pacific Ocean during the season of high biological ocean productivity. The project timeframe was coincident with complementary research vessel projects in the same area, however TORERO science was not dependent on concurrent ship operations.



FACILITIES

The project utilized the NSF/GV aircraft to fly at several altitudes collecting remote sensing and in-situ data. The GV was based in San José, Costa Rica and deployed to approximately 105°W longitude. An early campaign, forward deployment to Antofagasta in central Chile to study the Southern Ocean during three flights also took place before ferrying to San José for the remaining 4 weeks of the deployment.

TORERO utilized the GV capabilities very well both in terms of the wide altitude envelope and long operating range that were required to reach the project's objectives. Some compromises had to be made to accommodate the desired payload, and payload support during forward deployments was limited.



DATA ACCESS

Data Access
Field Catalog

DATA DOCUMENTATION

TORERO Data Policy
Data Set Documentation Guidelines
Data Submission Instructions

FACILITIES & PLATFORMS

HIAPER

PUBLICATIONS

TORERO Publications

MEETINGS AND PRESENTATIONS

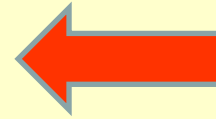
3rd Annual TORERO Workshop, 24-25 June 2014
Meetings and Presentations
AGU Session A075: Tropospheric Chemistry and Tropical Oceans - December 2012

DOCUMENTS

Aircraft Documentation
Pilot Flight Reports
Flight Hours
GV Floor Plan
Site Survey CR
Upload Schedule
Mission Schedule

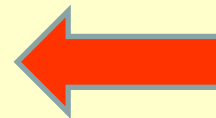
LOGISTICS

Safety & Security overview (Costa Rica, Chile)
Shipping List (xls)
ITAR compliance



Data Archive

- Data Policy
- Data Submission Instructions
- Documentation Guidelines



Publications

The Enduring Legacies of a Field Project

Data Submission Instructions:
FTP: [ftp.eol.ucar.edu](ftp://ftp.eol.ucar.edu)
Login: anonymous
(No password required.)
cd /pub/data/incoming/torero

http://www.eol.ucar.edu/field_projects/torero/

TORERO Data Policy Summary

- **Agreed deadlines for submission of data to the TORERO archive: Level 1 by 31 August 2012, Level 2 (final data) by 28 February 2013**
- **TORERO PIs have exclusive access to the data during the initial data analysis period (ending 31 August 2013) so that they will have ample time to publish their results.**
- **All data will be considered public domain 18 months after the end of the field campaign (i.e., on 31 August 2013 and thereafter)**



TORERO Data Archive



TORERO Data Sets







We have collected 90% of 126 datasets in the Data Archive

DATA BY CATEGORY

- Aircraft
- Ancillary
- Chemistry
- Land Based
- Model
- Oceanography
- Photography
- Radar
- Radiation
- Satellite
- Ship Based
- Upper Air

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Email comments & questions to codiac@ucar.edu

Data Set Name (Responsible Group/PIs shown in parentheses)	Date Posted	Info
Aircraft		
TORERO Chat Logs [(NCAR-EOL)]		
Aircraft: NSF/NCAR GV HIAPER		
GV AeroLaser Vacuum Ultra Violet (VUV) Fluorescence In Situ Carbon monoxide (CO) mixing ratio [Flocke, F., T. Campos, D. Stechman, M. Rooney (NCAR-ACD)]	2013-05-08	
GV Aircraft Table of Flights [(NCAR-EOL)]	2012-07-17	
GV AMAX DOAS Report [Volkamer, Rainer (U. Colorado)]	2012-07-17	
GV AMAX-DOAS Data [Volkamer, Rainer (U. Colorado)]	Updated 2014-05-07	
GV Digital Camera jpg Imagery (Downward-Looking) [Beaton, S. (NCAR-EOL-RAF)]	2012-04-17	
GV Digital Camera jpg Imagery (Forward-Looking) [Beaton, S. (NCAR-EOL-RAF)]	2012-04-17	
GV Digital Camera jpg Imagery (Left-Looking) [Beaton, S. (NCAR-EOL-RAF)]	2012-04-17	
GV Digital Camera jpg Imagery (Right-Looking) [Beaton, S. (NCAR-EOL-RAF)]	2012-04-17	
GV Digital Camera Movies with data - final [(NCAR-EOL-RAF)]	2012-07-23	
GV Flight Tracks (Google Earth .kml files) [(NCAR-EOL-RAF)]	2012-06-22	
GV HIAPER Atmospheric Radiation Package (HARP) Actinic Flux and Irradiance Report [Hall, Samuel (NCAR-ACD)]	2012-07-17	
GV HIAPER Atmospheric Radiation Package (HARP) Actinic Flux Data [Hall, Samuel (NCAR-ACD)]	Updated 2014-05-07	

http://data.eol.ucar.edu/master_list/?project=TORERO

TORERO Data Archive

Outstanding Data Sets:

GV High Spectral Resolution LIDAR (HSRL) Data [Eloranta, E. (U Wisconsin)]
GV Reactive Gaseous Mercury (RGM) Denuder Data [Hynes, Tony and Dieter Bauer (U. Miami-RSMAS)]
TM4-ECPL Modeling Data [Myriokefalitakis, Stelios (U Crete)]
R/V Ka'imimoana CTD Profiler Data [(NOAA OMI Total Column Ozone (O3) DU
R/V Ka'imimoana CO2 Flux Measurements [Blomquist, Byron and Chris Fairall (U Hawaii, NOAA-ESRL-PSD)] (Byron Blomquist, 5/10/13, will send next week)
R/V Ka'imimoana CU Light Emitting Diode Cavity Enhanced DOAS (LED-CE-DOAS_ Data [Coburn, Sean (U. Colorado)]
R/V Ka'imimoana CU SMAX-DOAS Data [Coburn, Sean (U. Colorado)]
R/V Ka'imimoana GC-MS Data
R/V Ka'imimoana I2 & XY Denuder Data [Hoffmann, Thorsten (JGU)]
R/V Ka'imimoana Soundings [Volkamer, R. and Holger Voemel (U Colorado, CIRES)]
R/V Ka'imimoana State and Navigation Parameters [Fairall, C. (NOAA-ESRL-PSD)]

TORERO Data Archive Metrics

TORERO: Tropical Ocean tRoposphere Exchange of Reactive halogen species and Oxygenated VOC Metrics

Unique Users: 30

Total Orders: 134 Unique Orders: 83

Total Data Served: 42.1 GB

[Click here to view file listings](#)

[Click here to hide the breakdown by dataset](#)

Archive ID	Total Orders	Unique Orders	Order Size
352.002	2	2	228.0 MB
352.004	4	2	10.0 GB
352.007	26	13	24.8 GB
352.008	8	6	8.3 MB
352.024	1	1	191.8 MB
352.048	6	4	2.4 MB
352.054	1	1	149.3 MB
352.065	10	5	140.5 MB
352.066	6	2	6.1 GB
352.067	6	4	15.4 MB
352.068	14	9	37.3 MB
352.070	11	8	11.9 MB
352.071	10	3	189.4 MB
352.072	2	2	103.0 KB
352.073	3	3	3.5 MB
352.074	6	2	23.8 MB
352.075	4	3	21.5 MB
352.076	2	2	22.0 MB
352.077	3	3	406.0 KB
352.079	2	2	141.7 MB
352.081	1	1	169.0 KB
352.082	6	5	2.0 MB

**Total Data Served:
42.1 GB**

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TORERO PROJECT PUBLICATIONS LIBRARY



TORERO Publication References

How to Submit Publication References to this List

Publications

Conferences

Reports

PUBLICATIONS

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I-L

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U-Z

B

- Dix, B., S. Baidar, J. F. Bresch, S. R. Hall, K. S. Schmidt, S. Wang, and R. Volkamer, 2013: Detection of iodine monoxide in the tropical free troposphere. PNAS 2013; published ahead of print, doi:10.1073/pnas.1212386110.

CONFERENCE PROCEEDINGS

A-D

E-H

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- AGU 2012 Fall Meeting Tropospheric Chemistry and Tropical Oceans Sessions (December 2012)
- Andrews, S. J., and L. J. Carpenter, 2012: Analysis of very short-lived halocarbons in the ocean and atmosphere using fully automated sampling techniques. EGU General Assembly 2012, p.6951.
- Coburn, S., S. Wang, A. terSchure, M. Evans, and R. Volkamer (2013), Observations and modeling of bromine induced mercury oxidation in the tropical free troposphere during TORERO, Abstract EGU2013-12452 presented at 2013 EGU General Assembly, Vienna, Austria, 7-12 April.
- Volkamer, R., and E. Apel (2013), Observation and modeling of short-lived oxygenated hydrocarbons in the tropical free troposphere, Abstract EGU2013-6708 presented at 2013 EGU General Assembly, Vienna, Austria, 7-12 April.

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To submit a TORERO publication reference, please send an email to Steve Williams at sfw@ucar.edu including the following information:

- **Corresponding Author, email, organization/institution**
- **Citation**
- **URL of online publication. If publication is *not* available on-line, please include as attachment to e-mail, if possible.**

Aircraft Documentation
Pilot Flight Reports
Flight Hours
GV Floor Plan
Site Survey CR
Upload Schedule
Mission Schedule

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Hotel Terrado - reservations
Local Information - Antofagasta

RELATED LINKS

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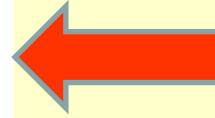
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Chemistry and Tropical Oceans -
December 2012

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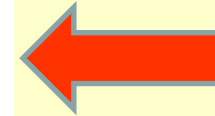
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Site Visit 2012



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Linda Echo-Hawk (echohawk@ucar.edu)

https://www.eol.ucar.edu/field_projects/torero/