Be sure to attend the MAGIC Breakout Session on Wednesday, March 20 from 7:00-8:30 pm!

Other MAGIC Posters:
- #17 (R. Coulter)
- #35 (M. Dunn)
- #60 (M. Ritsche)
- #61 (D. Troyan)
- #62 (V. Morris)
- #63 (M. J. Bartholomew)
- #64 (D. Holdridge)
- #168 (P. Kollias)

MAGIC - The First Phase

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Charles L. Flagg (Stony Brook University)
Stephen E. Klein (Lawrence Livermore National Laboratory)
Pavlos Kollias (McGill University)
Gerald Mace (University of Utah)
R. Michael Reynolds (RMR Company)
Stephen E. Schwartz (Brookhaven National Laboratory)
A. Pier Siebesma (KNMI, The Netherlands)
Joao Teixeira (Jet Propulsion Laboratory)
Warren J. Wiscombe (NASA GSFC)
Robert Wood (University of Washington)
Minghua Zhang (Stony Brook University)

THANKS TO HORIZON LINES AND THE CAPTAIN AND CREW OF THE SPIRIT FOR THEIR SUPPORT AND ENTHUSIASM FOR MAGIC!

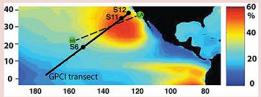
MAGIC Overview

MAGIC is a field campaign that deploys the Second ARM Mobile Facility (AMF2) aboard the Horizon Lines cargo container Spirit to measure properties of clouds, precipitation, aerosols, and radiation, and atmospheric and meteorological conditions, along a transect between Los Angeles, CA and Honolulu, HI.

Horizon Spirit

MAGIC Goal

The goal of MAGIC is to investigate the stratocumulus-to-cumulus transition that occurs along this transect and to improve the representation of this transition in climate models by characterizing the essential properties of the transition through repeated measurements along this transect.



June-July-August average low level cloud cover from ISCCP, with MAGIC transect (dashed line) and GPCI transect (solid line), along which Points S6, S11, and S12 are used in the GCILS model intercomparison, adapted from Teixeira et al., 2011.

Reference: Teixeira et al.,Tropical and Subtropical Cloud Transitions in Weather and Climate Prediction Models:The GCSS/WGNE Pacific Cross-Section Intercomparison (GPCI), J. Climate, v. 24, 2011, doi: 10.1175/2011JCLI3672.1

MAGIC Timetable

MAGIC commenced in September, 2012 and 9 legs (round trips) were completed by mid-January, 2013, when AMF2 was uninstalled so that the Spirit could undergo its previously scheduled dry dock period.

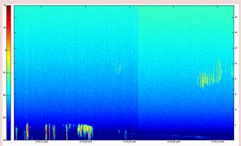
The Spirit is scheduled to return from dry dock in late April, 2013, and AMF2 will be installed probably in early May. An Intensive Observational Period (IOP) will occur in July, 2013. MAGIC will continue until the end of September, 2013. Approximately 10 additional legs are expected.

MAGIC Data !!!

MAGIC data are being analyzed and many data sets are available. Tables of lat/lon values vs. time are available for each leg, as is a table of sonde launches.

Instrument Status by Leg

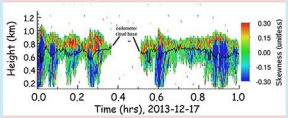
KaZR burst mode reflectivity



Honolulu — Los Angeles

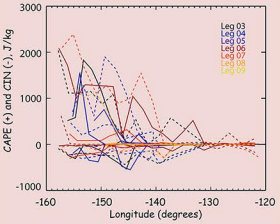
Graph courtesy Kevin Widener

KAZR Doppler Spectrum Skewness



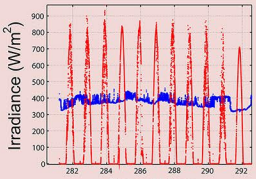
Graph courtesy Ed Luke

Convective Available Potential Energy (CAPE) and Convective INhibition (CIN)



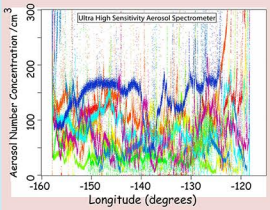
Graph courtesy Tami Toto

Solar and Longwave Irradiance



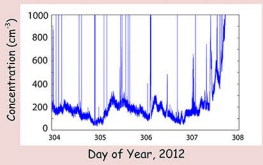
Graph courtesy Mike Reynolds

Aerosol Number Concentration, UHSAS



Graph courtesy Gunnar Senum

Aerosol Number Concentration, CPC



Graph courtesy Chongai Kuang

Future MAGIC Plans (in proposal stage):

MAGIC-Lite will deploy autonomous instruments to measure meteorology, radiation, cloud base height, and sea-surface temperature.

MAGIC-2 will be a full-year deployment of AMF2 aboard the Spirit.

For more information, contact Ernie Lewis (elewis@bnl.gov)

http://www.bnl.gov/envsci/ARM/MAGIC/
http://www.arm.gov/campaigns/amf2012magic
http://www.rmrco.com/cruise/magic/