**MAGIC Data Intro: Instrument Status Tables**

Version 2014-02-04

Written by Ernie Lewis

The tables below provide information on the status of the instruments during the MAGIC campaign. The designations are necessarily somewhat subjective, as the tables were originally complied by the technicians at the end of each leg and represent their judgment as to whether the instrument was mostly working well (no issues), required corrective maintenance or had partial data coverage, produced questionable data, was not operating, or wasn’t deployed. Please note that even if the instrument appeared to be working well this doesn’t indicate that the data quality is good, as there could be other issues that affect this. Likewise, merely because an instrument required corrective maintenance does not imply that the data quality is not good.

Some of the designations in the tables below were changed from what the technicians originally recorded because of later information, such as failure of a drive to back up data, and designations of instrument status may change in the future when more information on data quality becomes available. This table is unofficial and is meant only to provide guidance. Versions of this document will be denoted by date rather than version number, so consult the date above to see if you have the latest version. Please report any questions, concerns, suggestions, or errors to Ernie Lewis at [elewis@bnl.gov](mailto:elewis@bnl.gov).

The instruments in the tables are grouped (somewhat subjectively) into four categories: those instruments that provide information on clouds or the atmosphere, radiation measurement instruments, aerosol instruments, and other, which includes measurements of ship motion, meteorology, sea surface temperature, etc. The instruments and the data they provide will be described below **{this section is currently in progress}**.

**Instrument Status Table Leg03A to Leg09B**

Complied by Ernie Lewis 2014-02-04

The first leg with MAGIC instrumentation was Leg01B during which the ISAR was installed. During Leg02A and Leg02B, for which instrument status designations are not listed, the radars and other instruments were being set up; some collected data during these legs. During Leg03 most of the instruments were up and collecting data. On Leg09B, the instruments were without power for extended times and were being shut down. The instruments were removed from the ship after Leg09B from January, 2013 until May, 2013.

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|  | **Leg** | | | | | | | | | | | | |
| **Instrument** | **03A** | **03B** | **04A** | **04B** | **05A** | **05B** | **06A** | **06B** | **07A** | **07B** | **08A** | **08B** | **09A** |
| Ka-band reflectivity |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ka-band spectra |  |  |  |  |  |  |  |  |  |  |  |  |  |
| W-band reflectivity |  |  |  |  |  |  |  |  |  |  |  |  |  |
| W-band spectra |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Radar wind profiler |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HSRL |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Multipulse lidar |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MWR 2-channel |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MWR 3-channel |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ASSIST |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total Sky Imager |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ceilometer |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Portable Radiation Package |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Microtops readings |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CIMEL sun photometer |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Solar Array Spectrophotometer |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Solar Spectral Flux Radiometer |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| CPC |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CCN |  |  |  |  |  |  |  |  |  |  |  |  |  |
| UHSAS |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HTDMA |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Wet/dry nephelometer |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PSAP |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ozone |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Aerosol sampling |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Navigational information |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Meteorology |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Radiosonde launches |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Disdrometers |  |  |  |  |  |  |  |  |  |  |  |  |  |
| IR thermometer |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ISAR |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| No issues | Corrective maintenance or partial data | Questionable data | Instrument down | Not in service |

**Instrument Status Table Leg10A to Leg18B**

Complied by Ernie Lewis 2014-02-04

MAGIC instruments were redeployed during Leg10A, and the campaign continued until the end of Leg20B. The technicians did not report instrument status designations for Leg19A and Leg19B, but these were probably similar to those for Leg18B. During Leg20A and Leg20B the instruments were being turned off, so few data were collected during these legs (although sonde launches occurred on Leg20A, meteorological data were collected until the ship returned to port, and both radars were operating for most of the two legs).

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|  | **LEG** | | | | | | | | | | | | | | | | | |
| **Instrument** | **10A** | **10B** | **11A** | **11B** | **12A** | **12B** | **13A** | **13B** | **14A** | **14B** | **15A** | **15B** | **16A** | **16B** | **17A** | **17B** | **18A** | **18B** |
| Ka-band reflectivity |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ka-band spectra |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| W-band reflectivity |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| W-band spectra |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Radar wind profiler |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HSRL |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Multipulse lidar |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MWR 2-channel |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MWR 3-channel |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ASSIST |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total Sky Imager |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ceilometer |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Portable Radiation Package |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Microtops readings |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CIMEL sun photometer |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Solar Array Spectrophotometer |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Solar Spectral Flux Radiometer |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| CPC |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CCN |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| UHSAS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HTDMA |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Wet/dry nephelometer |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PSAP |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ozone |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Aerosol sampling |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Navigational information |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Meteorology |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Radiosonde launches |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Disdrometers |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| IR thermometer |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ISAR |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| No issues | Corrective maintenance or partial data | Questionable data | Instrument down | Not in service |