National Aeronautics and Space Administration Goddard Earth Science Data Information and Services Center (GES DISC)

README Document for AIRS Version 5 Granule Map Product

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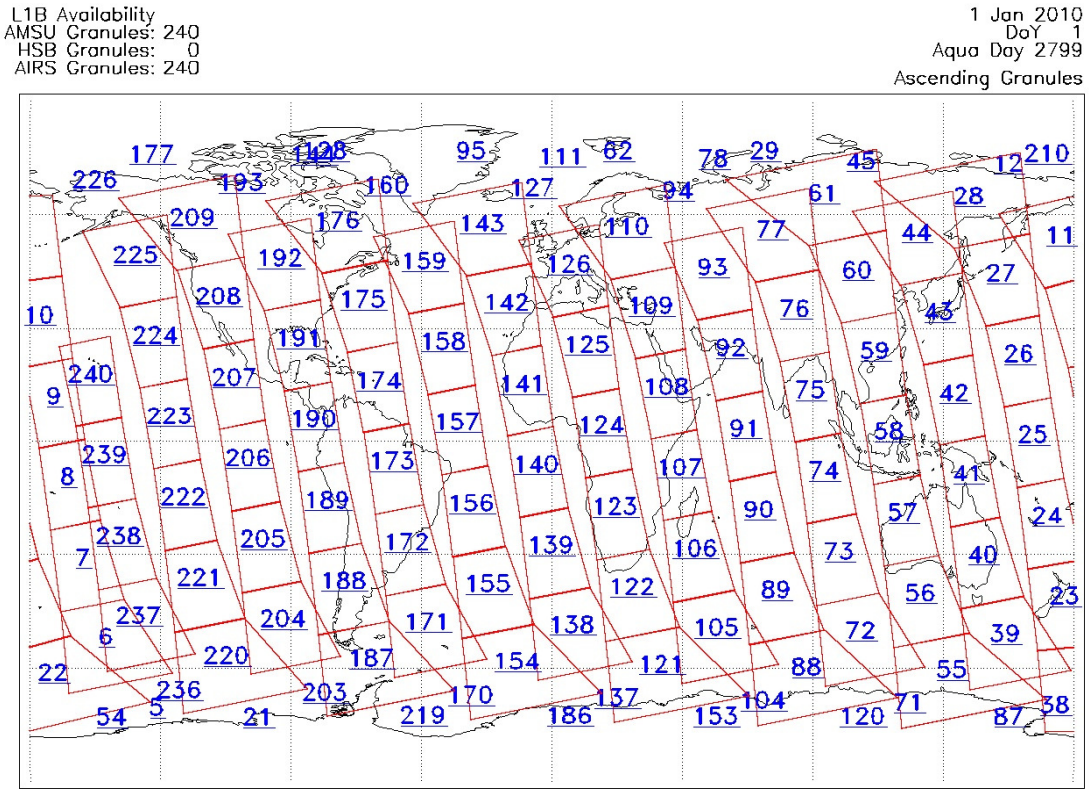
1.0 Introduction

This document provides basic information for using the Atmospheric Infrared Sounder (AIRS) Granule Map products with short name AIRXAMAP.

The AIRS Granule Map consists of products generated for the focus on displaying the available granules and their data coverage areas.

1.1 Dataset Description

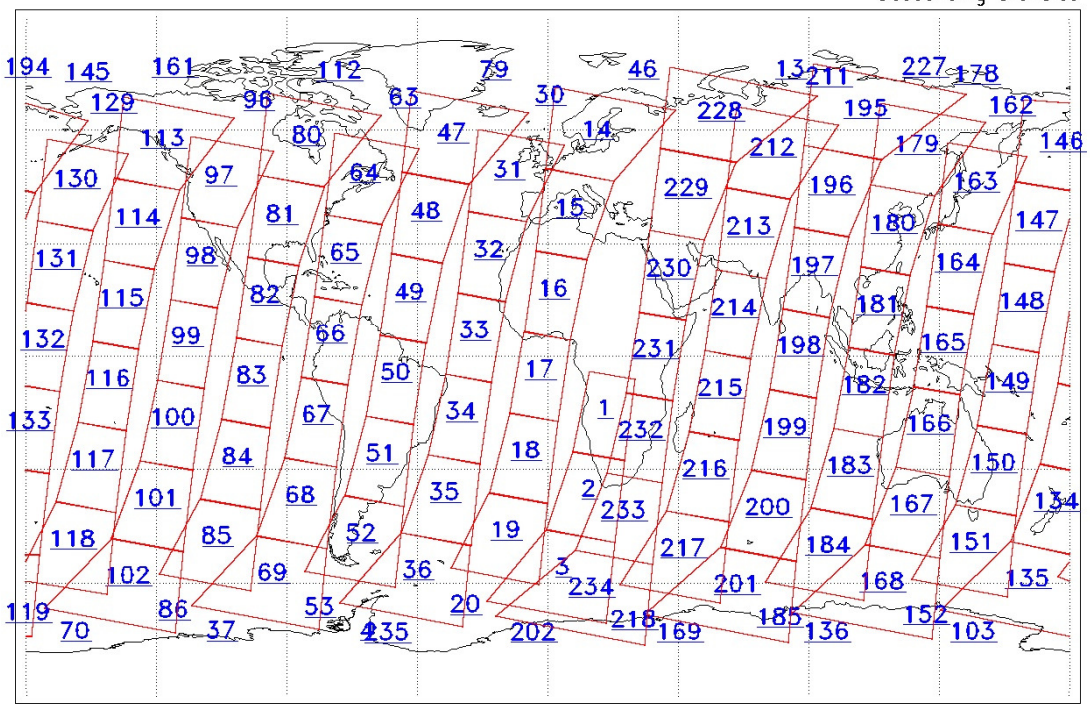
The AIRS is a grating spectrometer (R = 1200) aboard the second Earth Observing System (EOS) polar-orbiting platform, EOS Aqua. In combination with the Advanced Microwave Sounding Unit (AMSU) and the Humidity Sounder for Brazil (HSB), AIRS constitutes an innovative atmospheric sounding group of visible, infrared, and microwave sensors. An AIRS granule has been set as 6 minutes of data, 30 footprints cross track by 45 lines along track. The AIRS Granule Map Product consists of images of granule coverage in PDF and JPG format. The images are daily ones but updated every 6 minutes to capture any new available granule. Granules are assembled by ascending, descending, in north and south hemisphere, and the maps are in global cylindrical projection and satellite projection for better view. Four figures shown next are the Granule Map products in JPG format on January 1, 2010.



L1B Availability
AMSU Granules: 240
HSB Granules: 0
AIRS Granules: 240

1 Jan 2010
DoY 1
Aqua Day 2799

Descending Granules

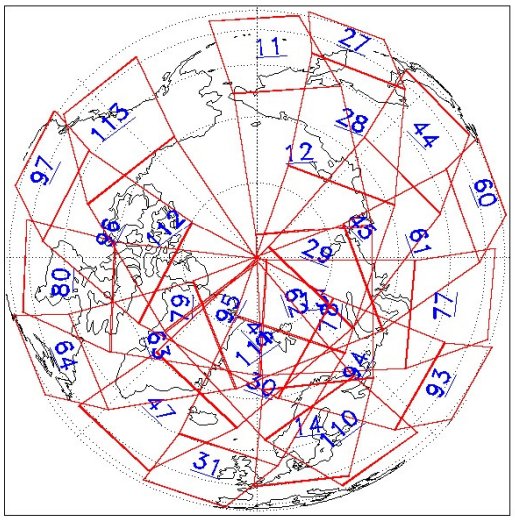


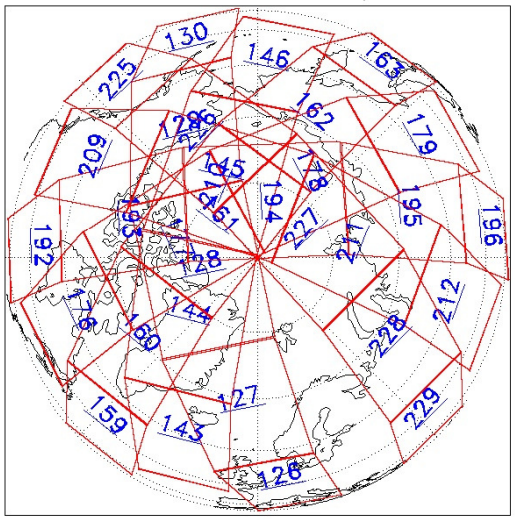
Legend: AMSU Available, *HSB Available*, AIRS Available

L1B Availability
AMSU Granules: 240
HSB Granules: 0
AIRS Granules: 240

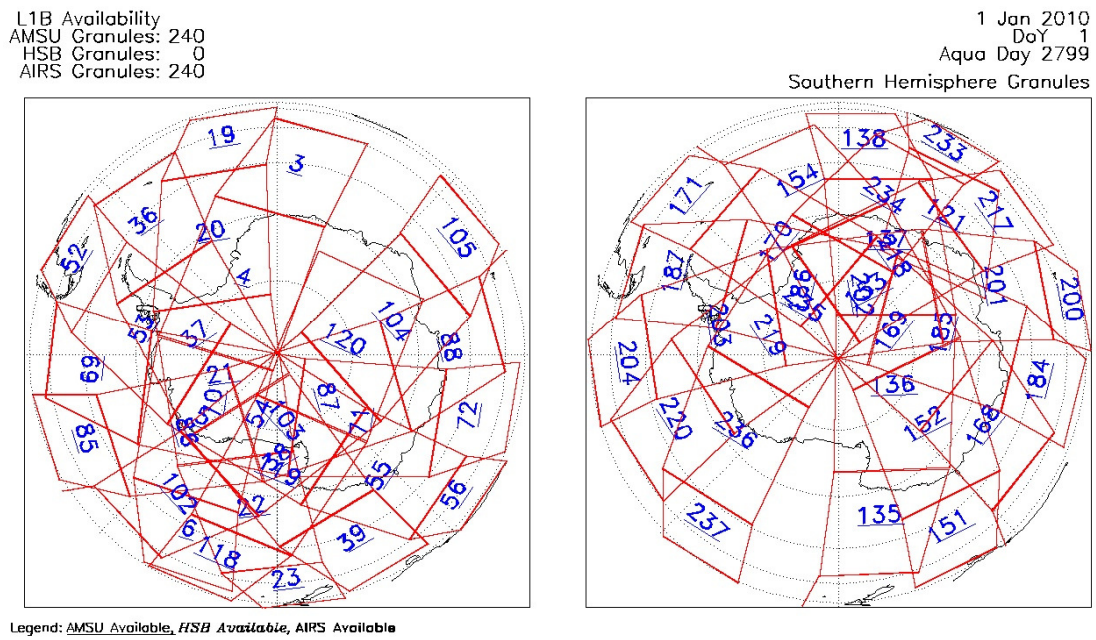
1 Jan 2010
DoY 1
Aqua Day 2799

Northern Hemisphere Granules





Legend: AMSU Available, *HSB Available*, AIRS Available



1.2 Algorithm Background

The AIRS Level 1 prouduct contains the footprint location and coverage information of one granule. The algorithm gets the latitude and longitude values of four corners of a granule bounding box and draws a quadrilateral from them on the projection map to represent the granule coverage. The granule number is labeled in the center of the quadrilateral. As the AIRS Level 1 product is currently version 5, the Granule Map drawn from Level 1 product is also treated as version 5 product.

1.3 Data Disclaimer

The maps only approximately illustrate the AIRS coverage area on the earth of all available granules. The exact coverage of all field of views (FOVs) in a granule can not be simply represented by a quadrilateral. Users can find FOV locations from the AIRS Level 1 and Level 2 products.

2.0 Data Organization

The AIRS Granule Map Products are only daily ones but updated every 6 minutes to capture any new available granule.

2.1 File Naming Convention

Below is an example of what was provided for an AIRS Granule Map Product dataset file name convention:

AIRS.*yyyy***.***mm***.***dd***.GranuleMap.***assemblyType***.jpg**

AIRS.*yyyy***.***mm***.***dd***.GranuleMap.pdf**

Where:
- yyyy = 4 digit year number [2002 -].
- mm = 2 digit month number [01-12]
- dd = day of month [01-31]
- assemblyType: can be one of Ascending, Descending, North, South.

Filename example: AIRS.2010.01.01.GranuleMap.Ascending.jpg
AIRS.2010.01.01.GranuleMap.Descending.jpg
AIRS.2010.01.01.GranuleMap.North.jpg
AIRS.2010.01.01.GranuleMap.South.jpg
AIRS.2010.01.01.GranuleMap.pdf

2.2 File Format and Structure

Granule Map product files are in JPG and PDF format.

3.0 Data Contents

Ascending.jpg file: an image of map showing all ascending granules
Descending.jpg file: an image of map showing all descending granules
North.jpg file: an image of map showing all granules in north hemisphere
South.jpg file: an image of map showing all granules in south hemisphere
GranuleMap.pdf file: a document file containing 4 images above

4.0 Options for Reading the Data

Many open source tools and applications can open/read JPG and PDF file, such as web browsers and Adobe Acrobat Reader.

5.0 Data Services

Granule Map product dataset is generated, archived, and distributed in NASA GES DISC.

If you need assistance or wish to report a problem:
Email: gsfc-help-disc@lists.nasa.gov
Voice: 301-614-5224
Fax: 301-614-5268
Address:
Goddard Earth Sciences Data and Information Services Center NASA Goddard Space Flight Center Code 610.2 Greenbelt, MD 20771 USA

6.0 More Information

Web resources for AIRS data users:

NASA/JPL:

AIRS Project Web Site: https://airs.jpl.nasa.gov/
Ask AIRS Science Questions: https://airs.jpl.nasa.gov/ask_airs

NASA/GSFC:

GES DISC Web Page: https://disc.gsfc.nasa.gov
AIRS Documentation: https://disc.gsfc.nasa.gov/information/documents?title=AIRS%20Documentation

7.0 Acknowledgements

The prototype software was developed by JPL AIRS Science Team. The AIRS support team in GES DISC enhanced it to plot desired images and fit in the real-time AIRS data processing work flow.