

**Notice to Data Users:**  
**The documentation for this data set was provided solely by the Principal Investigator(s) and was not further developed, thoroughly reviewed, or edited by NSIDC. Thus, support for this data set may be limited.**

## AMSRice03 MODIS Imagery

### Summary

This data set contains Moderate Resolution Imaging Spectroradiometer (MODIS) browse images of the Alaska, USA area, complementing the joint in situ and aircraft Advanced Microwave Scanning Radiometer Sea Ice Product Validation (AMSRice03) campaign conducted in March 2003. The images are visible imagery collected 13, 15, 16, 19, 20 and 22 March 2003. The total volume of this data set is approximately 3 gigabytes. Data are provided in binary image files with corresponding Environment for Visualizing Images (ENVI) header files, and are available via FTP.

These data were collected as part of a validation study for the Advanced Microwave Scanning Radiometer - Earth Observing System (AMSR-E). AMSR-E is a mission instrument launched aboard NASA's Aqua Satellite on 04 May 2002.

### Citing These Data:

The following example shows how to cite the use of this data set in a publication. List the principal investigators, year of data set release, data set title, and publisher.

Cavaliere, Donald J., Alvaro Ivanoff, Dorothy Hall, and Thorsten Markus. 2009. *AMSRice03 MODIS Imagery*. Boulder, Colorado USA: NASA DAAC at the National Snow and Ice Data Center.

### Overview Table

Category	Description
<u>Data format</u>	Binary Band Sequential Format (BSQ) image files ENVI header files
<u>Spatial coverage and resolution</u>	42.54 to 79.31 N, 159.65 to 175.63 W 40.94 to 84.27 N, 105.82 to 160.94 W 42.95 to 77.58 N, 142.41 to 172.42 W 56.78 to 82.04 N, 106.22 to 169.64 W 44.52 to 86.60 N, 103.35 to 168.62 W

	42.04 to 80.68 N, 148.96 to 174.78 W 500 m resolution
<u>Temporal coverage</u>	13, 15, 16, 19, 20, and 22 March 2003
<u>File naming convention</u>	modis_2003mar(nn).hdr modis_2003mar(nn).img
<u>File size</u>	Image files: 308 MB to 768 MB Header files: 1 KB each
<u>Parameter(s)</u>	visible imagery (620–670 nm)
<u>Procedures for obtaining data</u>	Data are available via FTP.

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### 1. Contacts and Acknowledgments:

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## **2. Data Description:**

### **Format:**

The data set contains six binary Band Sequential Format (BSQ) image files. Each image file has a corresponding ENVI header file. The images are geo-referenced MODIS/AQUA Calibrated Radiances L1B Swath 500m (MYD02HKM) products, including the first 7 bands of level 1b radiances. The data values are in the same format as the original MYD02HKM product. Missing data are given a value of 0.

### **File Naming Convention:**

modis\_2003mar13\_2.hdr  
modis\_2003mar13\_2.img  
modis\_2003mar15.hdr  
modis\_2003mar15.img  
modis\_2003mar16.hdr  
modis\_2003mar16.img  
modis\_2003mar19.hdr  
modis\_2003mar19.img  
modis\_2003mar20.hdr  
modis\_2003mar20.img  
modis\_2003mar22.hdr  
modis\_2003mar22.img

### **File Size:**

The six image files range from 307.74 MB to 767.63 MB and total 3.23 GB.  
The six ENVI header files are 1 KB each.

### **Spatial Coverage:**

13 March 2003:  
Southernmost Latitude: 42.54 N  
Northernmost Latitude: 79.31 N  
Westernmost Longitude: 175.63 W  
Easternmost Longitude: 159.65 W

15 March 2003:  
Southernmost Latitude: 40.94 N  
Northernmost Latitude: 84.27 N

Westernmost Longitude: 160.94 W  
Easternmost Longitude: 105.82 W

16 March 2003:

Southernmost Latitude: 42.95 N  
Northernmost Latitude: 77.58 N  
Westernmost Longitude: 172.42 W  
Easternmost Longitude: 142.41 W

19 March 2003:

Southernmost Latitude: 56.78 N  
Northernmost Latitude: 82.04 N  
Westernmost Longitude: 169.64 W  
Easternmost Longitude: 106.22 W

20 March 2003:

Southernmost Latitude: 44.52 N  
Northernmost Latitude: 86.60 N  
Westernmost Longitude: 168.62 W  
Easternmost Longitude: 103.35 W

22 March 2003:

Southernmost Latitude: 42.04 N  
Northernmost Latitude: 80.68 N  
Westernmost Longitude: 174.78 W  
Easternmost Longitude: 148.96 W

### **Temporal Coverage:**

Imagery was captured on 13, 15, 16, 19, 20 and 22 March 2003.

### **Parameter or Variable:**

Visible imagery (620-670 nm) for evaluation of sea ice concentration, conditions and ice edges.

### **3. Data Access and Tools:**

#### **Data Access:**

Data are available via FTP at:  
<ftp://sidads.colorado.edu/pub/DATASETS/AVDM/data/cryosphere/AMSRice03/satellite/modis/>

## **Software and Tools:**

Tools appropriate for viewing these data are ENVI or other similar software packages.

## **Related Data Collections:**

For related data collections, please see the AMSR-E Validation Data Web site:  
[http://nsidc.org/data/amsr\\_validation/](http://nsidc.org/data/amsr_validation/)

## **4. Data Acquisition and Processing:**

MODIS was used to evaluate the performance of the Advanced Microwave Scanning Radiometer–EOS (AMSR-E) ice concentration product concurrent with the AMSRice03 joint field and aircraft campaign. MODIS Band-1 (620–670 nm) level-1B images covering the study area were obtained from the NASA Goddard Space Flight Center (GSFC) Distributed Active Archive Center (DAAC).

The MODIS data consists of six scenes of the Alaskan region, ranging in date from 13 March to 22 March 2003. The scenes are geo-referenced MODIS MYD02HKM products, including the first 7 bands of level 1b radiances at a 500m resolution.

The image (.img) files contain seven 16-bit images each. The images are on polar stereographic 500 m grids. The grid dimensions of the images vary. Refer to the header file for each image for specifics.

## **5. References and Related Publications:**

Heinrichs, John F., Donald J. Cavalieri, and Thorsten Markus. 2006. Assessment of the AMSR-E Sea Ice Concentration Product at the Ice Edge Using RADARSAT-1 and MODIS Imagery. *IEEE Transactions on Geoscience and Remote Sensing*, 44(11): 3070–3080.

More detailed information on MODIS data products can be found at the MODIS Web site (<http://www.mcst.ssai.biz/mcstweb/L1B/product.html>).

Refer to the AMSRIce03 Web site for in-depth information on the science mission and goal of the AMSRIce03 project:  
<http://polarbear.colorado.edu/AMSRICE/AMSRIce03.html>.

## **6. Document Information:**

### **List of Acronyms**

The following acronyms are used in this document:

AMSR-E – Advanced Microwave Scanning Radiometer – Earth Observing System  
AMSRice03 – Advanced Microwave Scanning Radiometer Sea Ice Product Validation  
BSQ – Binary Band Sequential Format  
CIRES – Cooperative Institute for Research in Environmental Sciences  
DAAC – Distributed Active Archive Center  
ENVI – Environment for Visualizing Images  
FTP – File transfer protocol  
GSFC – Goddard Space Flight Center  
MODIS – Moderate Resolution Imaging Spectroradiometer  
MYD02HKM – MODIS/AQUA Calibrated Radiances L1B Swath 500m  
NASA – National Aeronautics and Space Administration  
NSIDC – National Snow and Ice Data Center

### **Document Creation Date:**

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