

Remote Sensing Data for the ATLAS Mission

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During the period of the ATLAS mission, various sensors have passed through Puerto Rico for different time intervals. Images captured by MODIS have 5-minute duration for just only one time each day. Paths 3, 4, 5 and 6 of MISR have captured Puerto Rico contour in block 76. NOAA 14, NOAA 15 and NOAA 16 have passed Puerto Rico the period of February 11 until 16. Some images coincided with ATLAS flight schedule. Landsat-7 ETM+ passes through Puerto Rico every 16 days. For the period of ATLAS flights, Landsat-7 didn't overpass PR. GOES-12 Imager passes over the Caribbean in the following way: 9 periods of 15 minutes and 1 period of 30 minutes. There is a higher probability to match time intervals of ATLAS with GOES intervals.

The following table shows the available data for every sensor:

Sensor	Date	Time Interval(UTC)
MODIS AQUA	2004-042	06:20:00 to 06:25:00
MODIS TERRA	2004-042	15:50:00 to 15:55:00
NOAA-15	2004-042	13:01:54 to 13:08:19
NOAA-14	2004-042	13:37:34 to 13:49:09
MODIS AQUA	2004-043	05:25:00 to 05:30:00
MODIS TERRA	2004-043	14:55:00 to 15:00:00
MISR	2004-043	14:39:17 to 15:28:44
MODIS TERRA	2004-044	15:35:00 to 15:40:00
NOAA-16	2004-044	18:24:34 to 18:40:49
MODIS TERRA	2004-045	14:40:00 to 14:45:00
MODIS AQUA	2004-046	05:55:00 to 06:00:00
MODIS TERRA	2004-046	15:25:00 to 15:30:00
MODIS AQUA	2004-047	17:30:00 to 17:35:00
MODIS TERRA	2004-047	14:30:00 to 14:35:00
NOAA-14	2004-047	14:18:55 to 14:20:50

GOES-12 Imager has the following images for days 11,13 and 16:

Date	Time Interval(UTC)
2004-042	13:31:00
2004-042	13:45:00
2004-042	14:15:00
2004-042	14:31:00
2004-044	00:15:00
2004-044	14:01:00

2004-044	18:15:00
2004-044	18:45:00
2004-047	14:01:00
2004-047	14:15:00
2004-047	14:31:00
2004-047	14:45:00
2004-047	15:15:00
2004-047	15:31:00

Thermal band capabilities:

MODIS	Band #20: 3.660 - 3.840 μ m Band #21 and #22: 3.929 - 3.989 μ m Band #23: 4.020 - 4.080 μ m Band #31: 10.780 - 11.280 μ m Band #32: 11.770 - 12.270 μ m
AVHRR	Band #4: 10.30 - 11.30 μ m Band#5: 11.50 - 12.50 μ m
MISR	Multi-angle capability
GOES-12	Band #4: 11.1 μ m

Different images were collected for the ATLAS campaign period. MODIS Land Surface Temperature(LST) Product is MOD11 from Level 2 and has a resolution of 1km. Data granules were ordered at the EOS Data Gateway web site. For every day, there are two periods in which MODIS captures Puerto Rico. For some days, MODIS captures half part of Puerto Rico. That means that the day image will include half part maybe the west and the night image will include the east. For the ATLAS time period, this case occurs once.

The following table shows the date and time for MODIS LST images:

Date	Time
2004-02-11 (Day 042)	02:00 , 15:50
2004-02-12 (Day 043)	02:40 , 14:55
2004-02-13 (Day 044)	03:25 , 15:35
2004-02-14 (Day 045)	02:30 , 14:40
2004-02-15 (Day 046)	03:15 , 15:25
2004-02-16 (Day 047)	02:20 , 14:30