



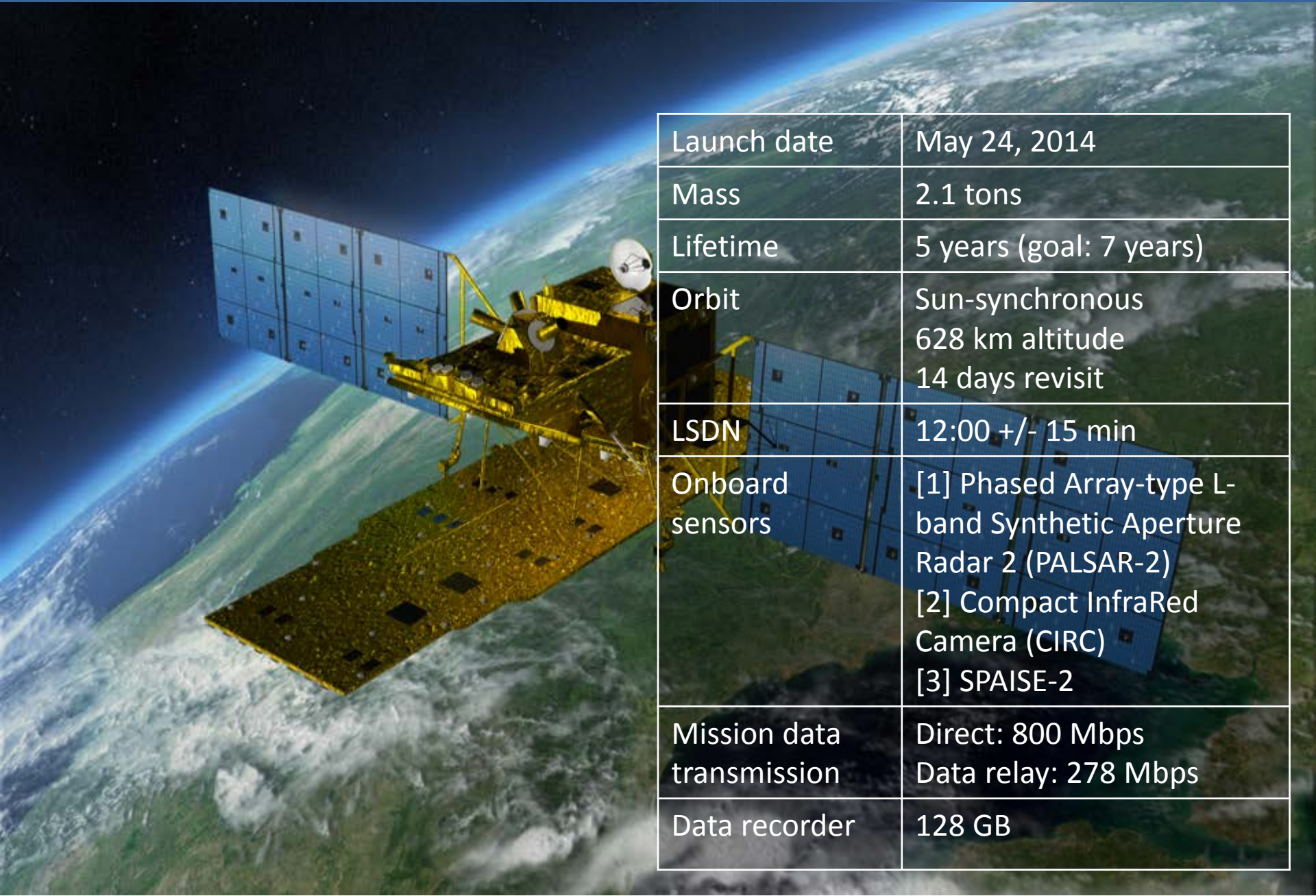
Polar
Space
Task
Group

***Polar Space Task Group
SAR Coordination Working Group Meeting 5***

ALOS-2 Operation Status

Masahiro Hori, Takeo Tadono, Takeshi Motohka,
Shinichi Suzuki, and Masanobu Shimada
Japan Aerospace Exploration Agency (JAXA)

ALOS-2: Advanced Land Observing Satellite-2



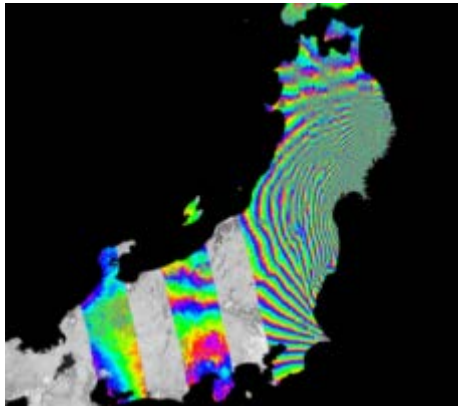
Launch date	May 24, 2014
Mass	2.1 tons
Lifetime	5 years (goal: 7 years)
Orbit	Sun-synchronous 628 km altitude 14 days revisit
LSDN	12:00 +/- 15 min
Onboard sensors	[1] Phased Array-type L-band Synthetic Aperture Radar 2 (PALSAR-2) [2] Compact InfraRed Camera (CIRC) [3] SPAISE-2
Mission data transmission	Direct: 800 Mbps Data relay: 278 Mbps
Data recorder	128 GB

ALOS-2: Advanced Land Observing Satellite-2

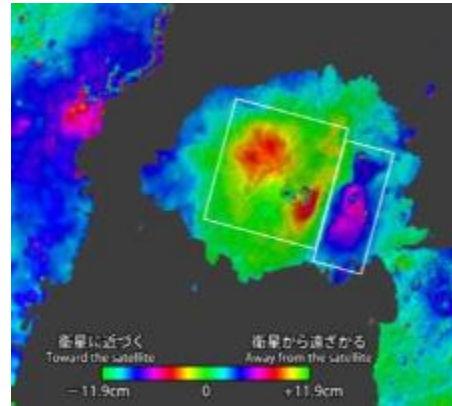
Mission Objectives

Disaster monitoring

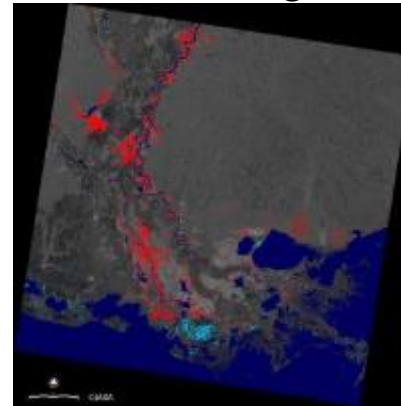
Earthquake



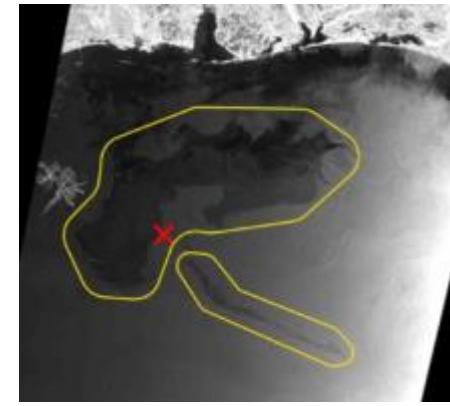
Volcano



Flooding

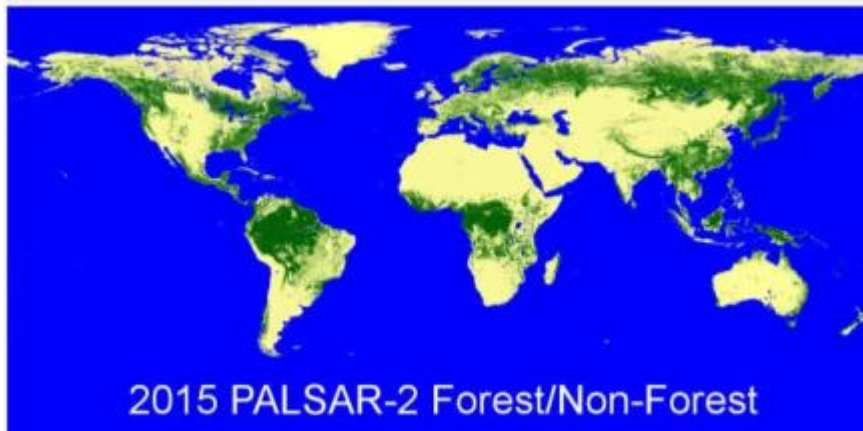


Ocean
Oil slick

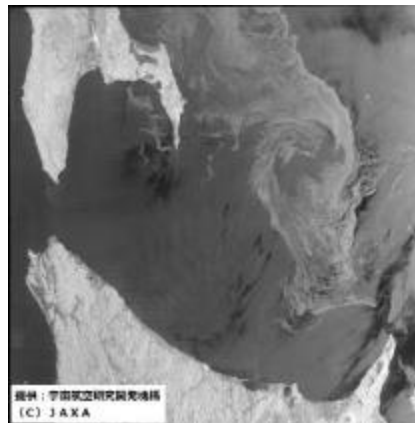


Environment

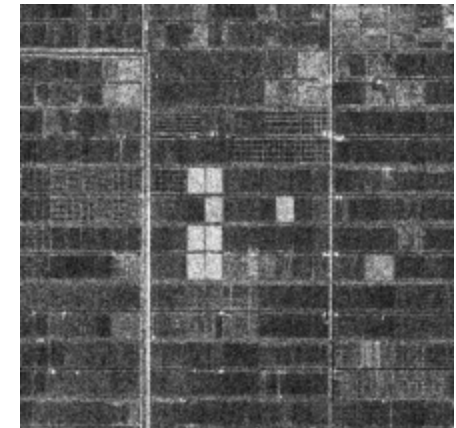
Forest and wetland



Sea ice



Agriculture &
natural resources



History of Japanese L-band SAR Satellites

JERS-1 SAR 1992~1998



ALOS PALSAR 2006~2011



ALOS-2 PALSAR-2 2014~



Transmit power: ~1.5 kW

~2 kW

~6.1 kW

Resolution: 18 m

10 m / 100 m

3 m / 100 m

Swath width: 75 km

70 km / 350 km

50 km / 490 km

Polarization: Single

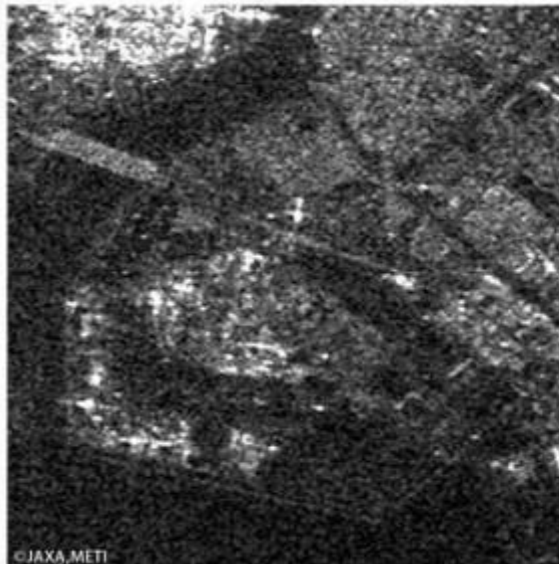
Single, Dual, Quad

Single, Dual, Quad

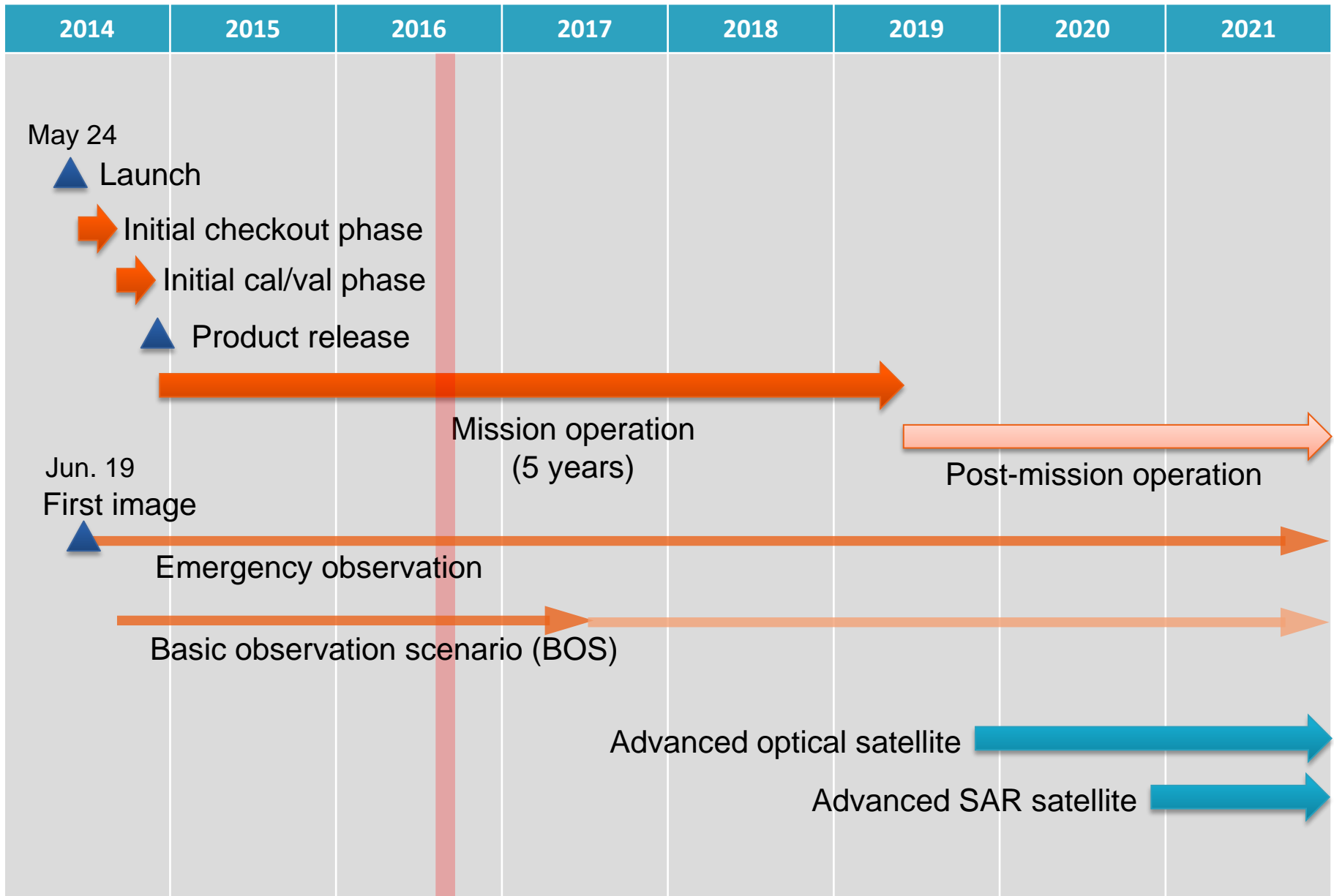
Obs. direction: Right

Right

Right or Left



Current status of ALOS-2



Data acquisition status

Coverage of PALSAR-2 observations during Aug. 2014 to May. 2016

Global 10 m resolution, HH/HV pol.

Beam F2, Ascending, Right
(Global land observation)

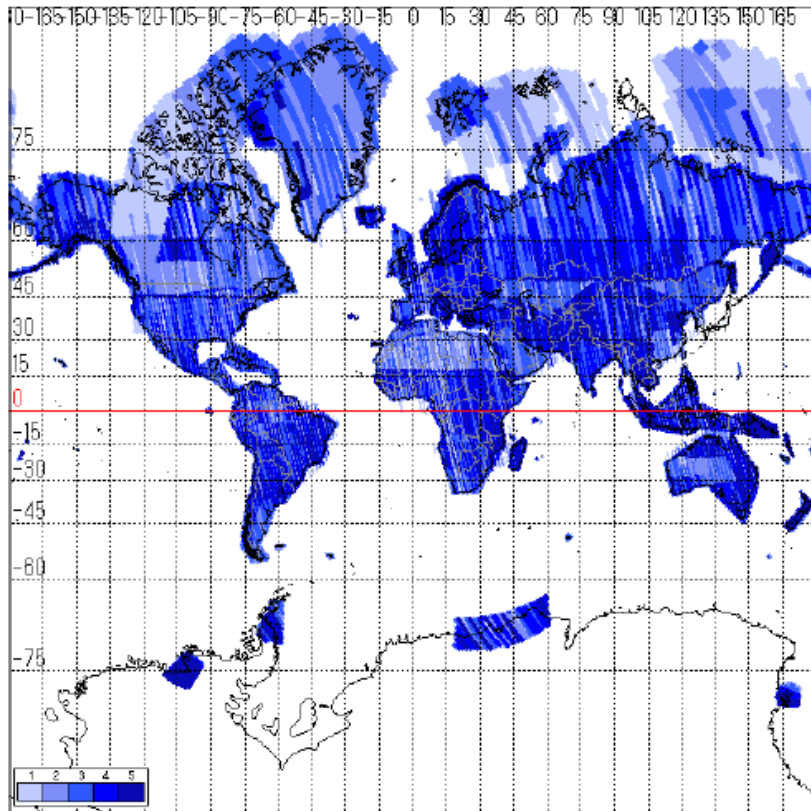


図 8-1 F2-5~F2-7/右観測/昇交軌道/HH+HV 『グローバル観測』

Beam F2, Descending, Right
(Deformation, Forest, Ice)

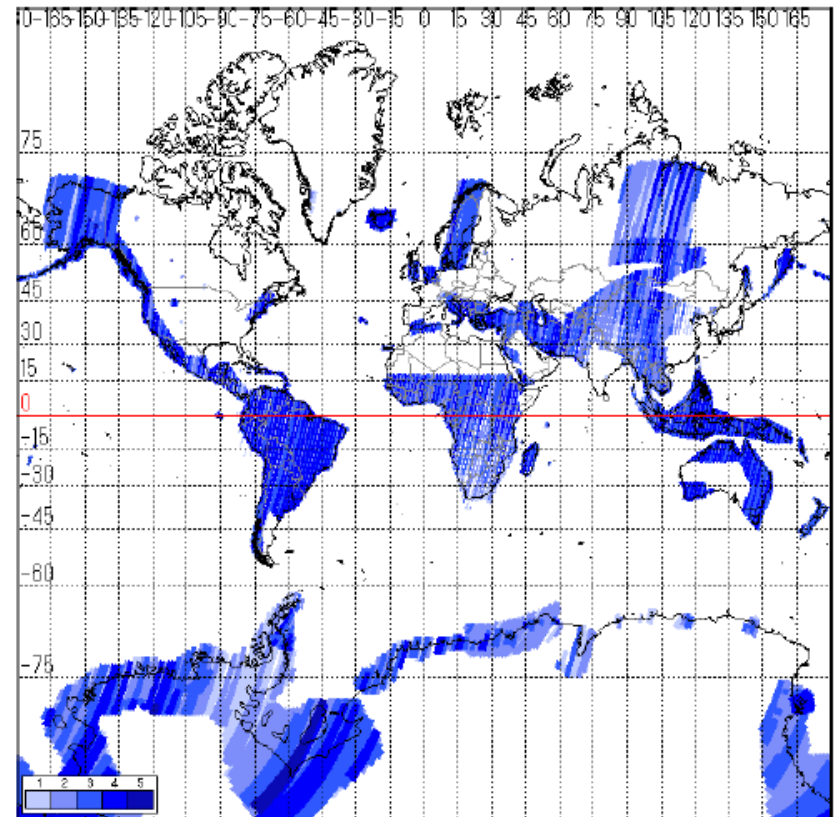


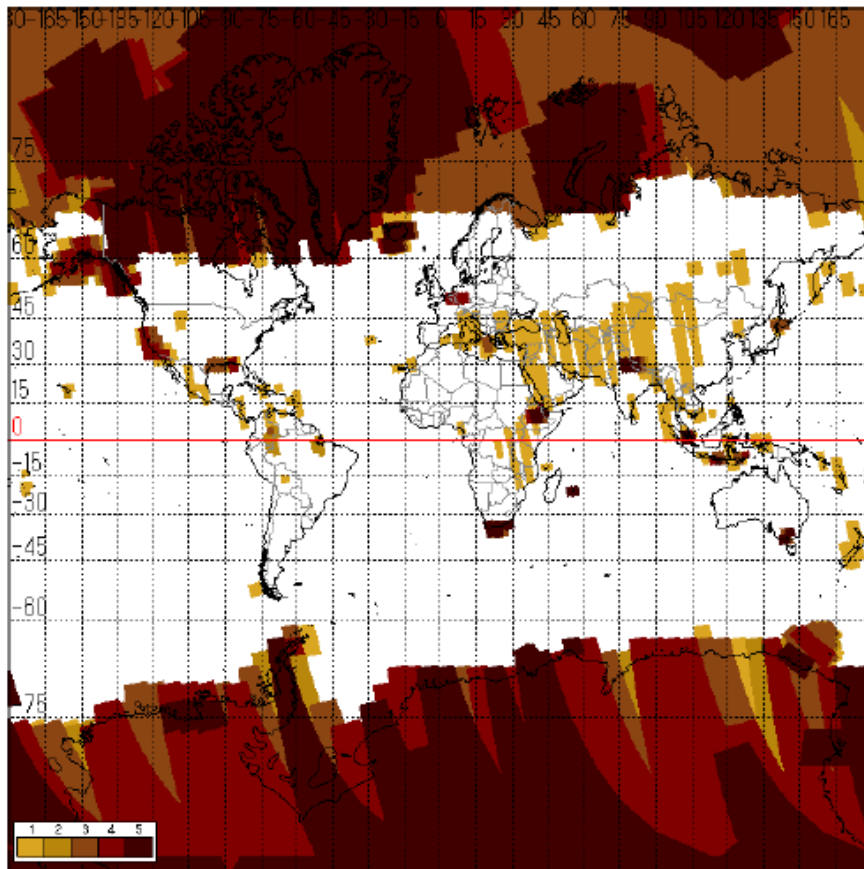
図 8-2 F2-5~F2-7/左右観測/降交軌道/HH

Data acquisition status

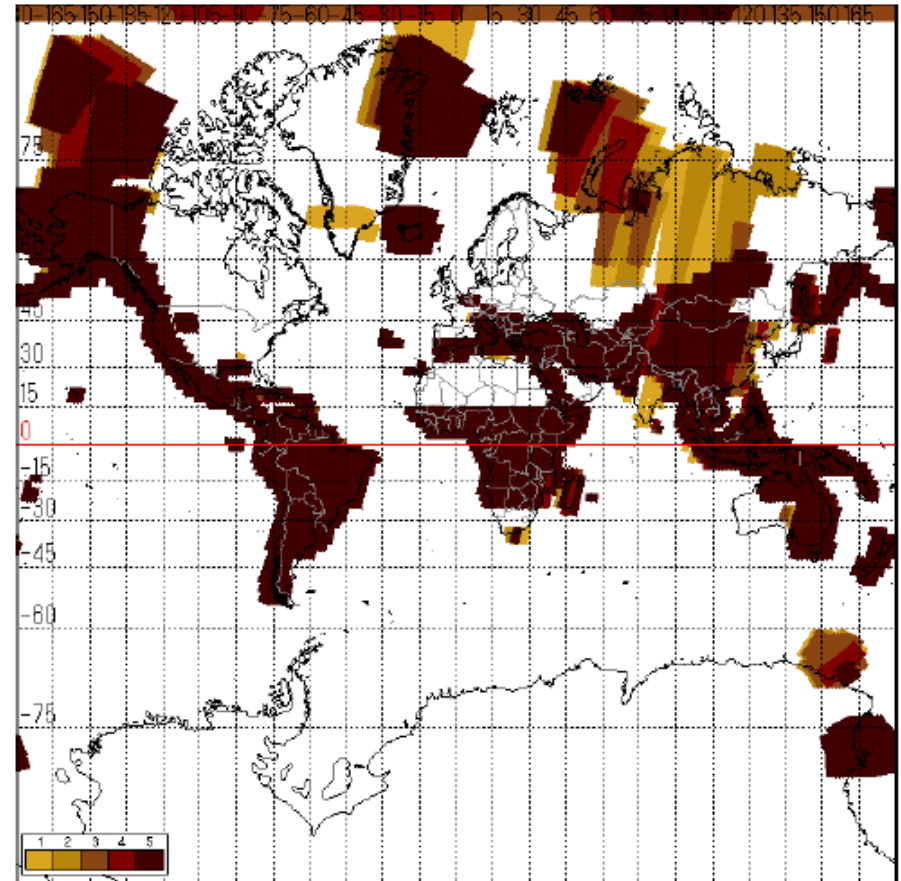
Coverage of PALSAR-2 observations during Aug. 2014 to May. 2016

Global ScanSAR (350km-swath/100m-res.), HH/HV pol.

Beam W2, Ascending, Right
(Polar regions)



Beam W2, Descending, Right
(Deformation, Forest, Ice)

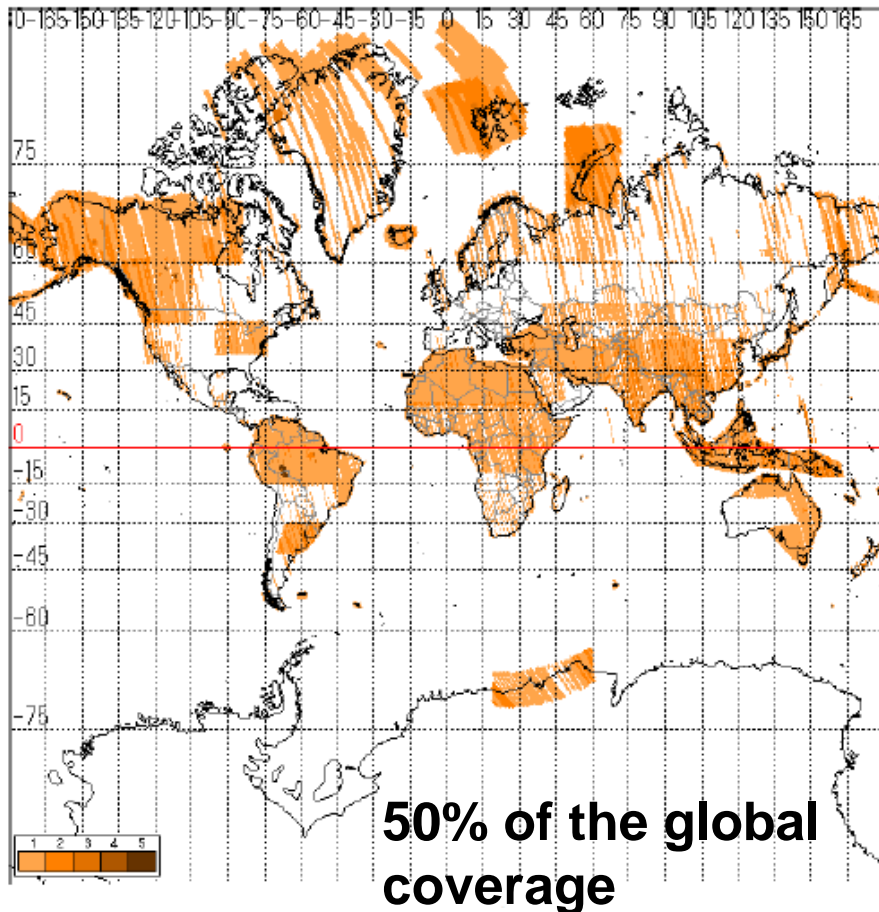


Data acquisition status

Coverage of PALSAR-2 observations during Aug. 2014 to May. 2016

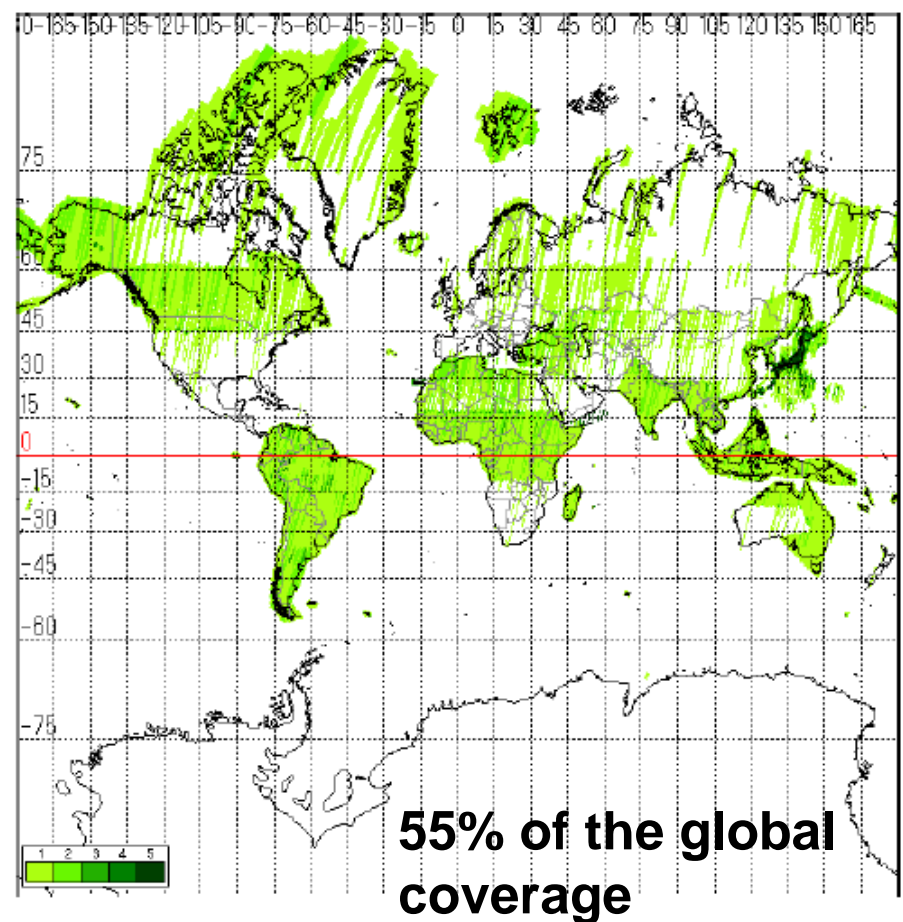
6m resolution with full-polarimetry

Beam FP6, Ascending, Right



3m resolution with HH-pol.

Beam U2, Descending, Right



4th Year's ALOS-2 BOS (Plan)

- Regarding to 4th year's ALOS-2 BOS from July 31 2017 to July 30 2018, polar regions will be continuously observed by ScanSAR W2 in Ascending orbit.

Global BOS (3rd year)

1 year = 26 cycles

■3年目(参考)

年	2016年													2017年												
回帰開始日	08/01	08/15	08/29	09/12	09/26	10/10	10/24	11/07	11/21	12/05	12/19	01/02	01/16	01/30	02/13	02/27	03/13	03/27	04/10	04/24	05/08	05/22	06/05	06/19	07/03	07/17
降交軌道 (南行)	南域 Super Site	南域 Super Site	地殻 湿地・伐採	南域 Super Site		地殻 湿地・伐採	全球3m (3/3)	地殻 湿地・伐採	全球3m (3/3)		地殻 湿地・伐採				地殻 湿地・伐採	地殻・森林	地殻 湿地・伐採	地殻・森林	地殻 湿地・伐採	地殻・森林	地殻 湿地・伐採	地殻・森林	地殻 湿地・伐採		地殻 湿地・伐採	
	F2(6)L	F2(6)L	W2 (2)R	F2(6)L		W2 (2)R	U2 (6)R	U2 (7)R	W2 (2)R	U2 (9)R	U2 (9)R	W2 (2)R			W2 (2)R	F2 (5)R	F2 (6)R	W2 (2)R	F2 (7)R	F2 (5)R	W2 (2)R	F2 (6)R	F2 (7)R	W2 (2)R		W2 (2)R
昇交軌道 (北行)	北極域/地殻	極域	World 1-1(10m)				World 2-1(10m)			極域	南極域	World 1-2(10m)			GR Super Site	GR Super Site	ポラリメトリ観測6m (3/5)					World 2-2(10m)				
	W2 (2)R	W2(2)R W2(2)L	F2 (7)R	F2 (5)R	F2 (6)R		F2 (7)R	F2 (5)R	F2 (6)R	W2(2)R W2(2)L	W2(2)L	F2 (7)R	F2 (5)R	F2 (6)R	F2(6)R	F2(6)R	FP (6)R	FP (5)R	FP (4)R	FP (3)R	FP (7)R			F2 (7)R	F2 (5)R	F2 (6)R

Global BOS (4th year, Planned)

年	2017年										2018年																
回帰開始日	07/31	08/14	08/28	09/11	09/25	10/09	10/23	11/06	11/20	12/04	12/18	01/01	01/15	01/29	02/12	02/26	03/12	03/26	04/09	04/23	05/07	05/21	06/04	06/18	07/02	07/16	
降交軌道 (南行)	南域 Super Site	地殻 南域 Super Site	湿地・伐採	南域 Super Site	地殻 南域 Super Site	湿地・伐採	10m (SuperSite)	湿地・伐採	10m (SuperSite)	地殻 10m	湿地・伐採	湿地・伐採	地殻	湿地・伐採	地殻	湿地・伐採	地殻	湿地・伐採	地殻	地殻	湿地・伐採		地殻	湿地・伐採	地殻	湿地・伐採	
	F2(6)L	F2(6)L	W2 (2)R	F2(6)L	F2(6)L	W2 (2)R	F2(7)R	F2(5)R	W2 (2)R	F2(6)R	W2(2)R	W2 (2)R		W2(2)R	W2 (2)R		F2 (5)R	W2 (2)R	W2(2)R	F2 (6)R	W2 (2)R		F2 (7)R	W2 (2)R	W2(2)R	W2 (2)R	
昇交軌道 (北行)	北極域/地殻	極域	World 1-1(10m)			World 2-1(10m)			極域	南極域	World 1-2(10m)			GR Super Site	森林			ポラリメトリ観測6m (4/5)					World 2-2(10m)				
	W2 (2)R	W2(2)R W2(2)L	F2 (7)R	F2 (5)R	F2 (6)R	F2 (7)R	F2 (5)R	F2 (6)R	W2(2)R W2(2)L	W2(2)L	F2 (7)R	F2 (5)R	F2 (6)R	F2(6)R	F2 (6)R	F2 (7)R	F2 (5)R	FP (6)R	FP (5)R	FP (4)R	FP (3)R	FP (7)R	F2 (7)R	F2 (5)R	F2 (6)R		

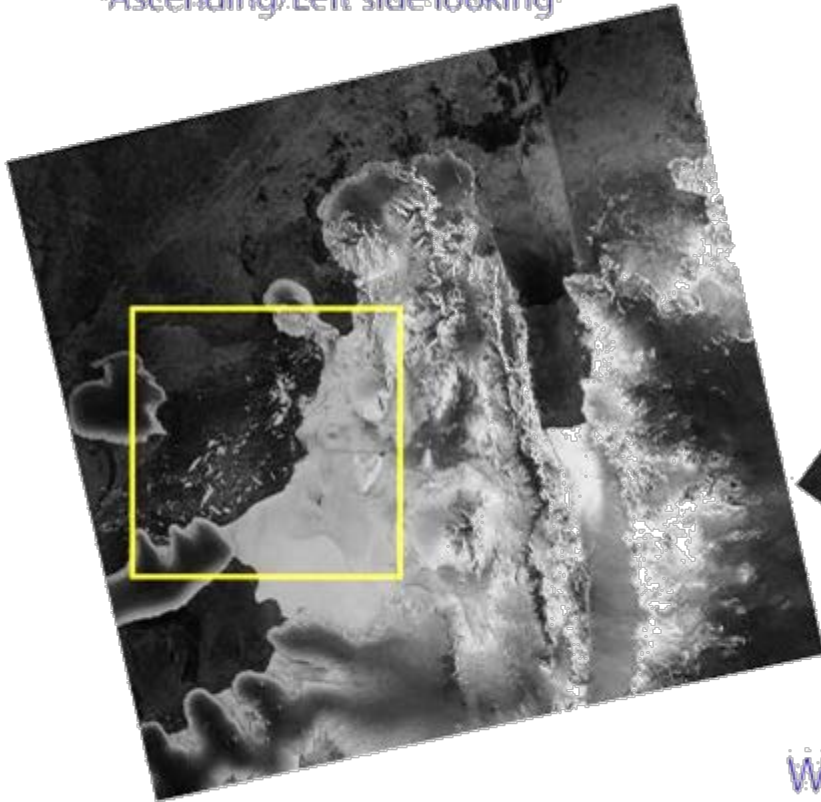


Polar
Space
Task
Group

Image example of PALSAR and PALSAR-2 on sea ice retreat around Antarctic Peninsula/Wilkins Sound

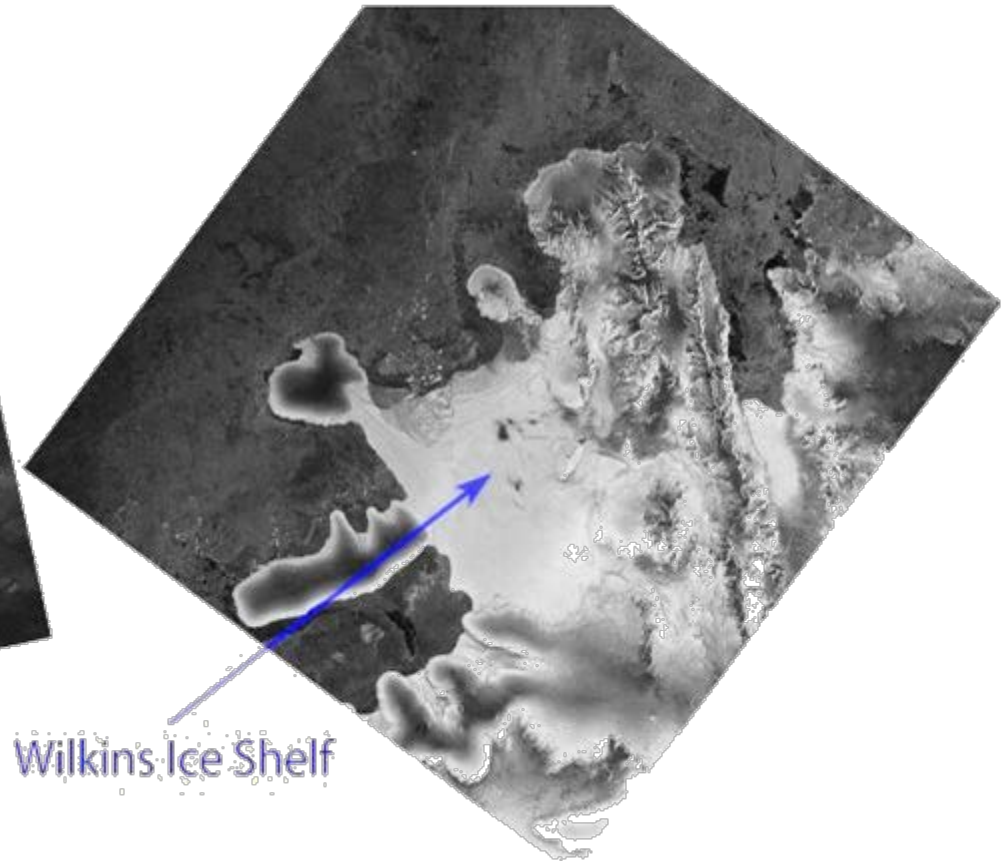
ALOS-2/PALSAR-2
2015/06/19

Ascending/Left-side looking



ALOS/PALSAR
2007/08/19

Descending/Right-side looking



Wilkins Ice Shelf



Polar
Space
Task
Group

Image example of PALSAR and PALSAR-2 on sea ice retreat around Antarctic Peninsula/Wilkins Sound

