

# Extraction of damaged areas from optical satellite images

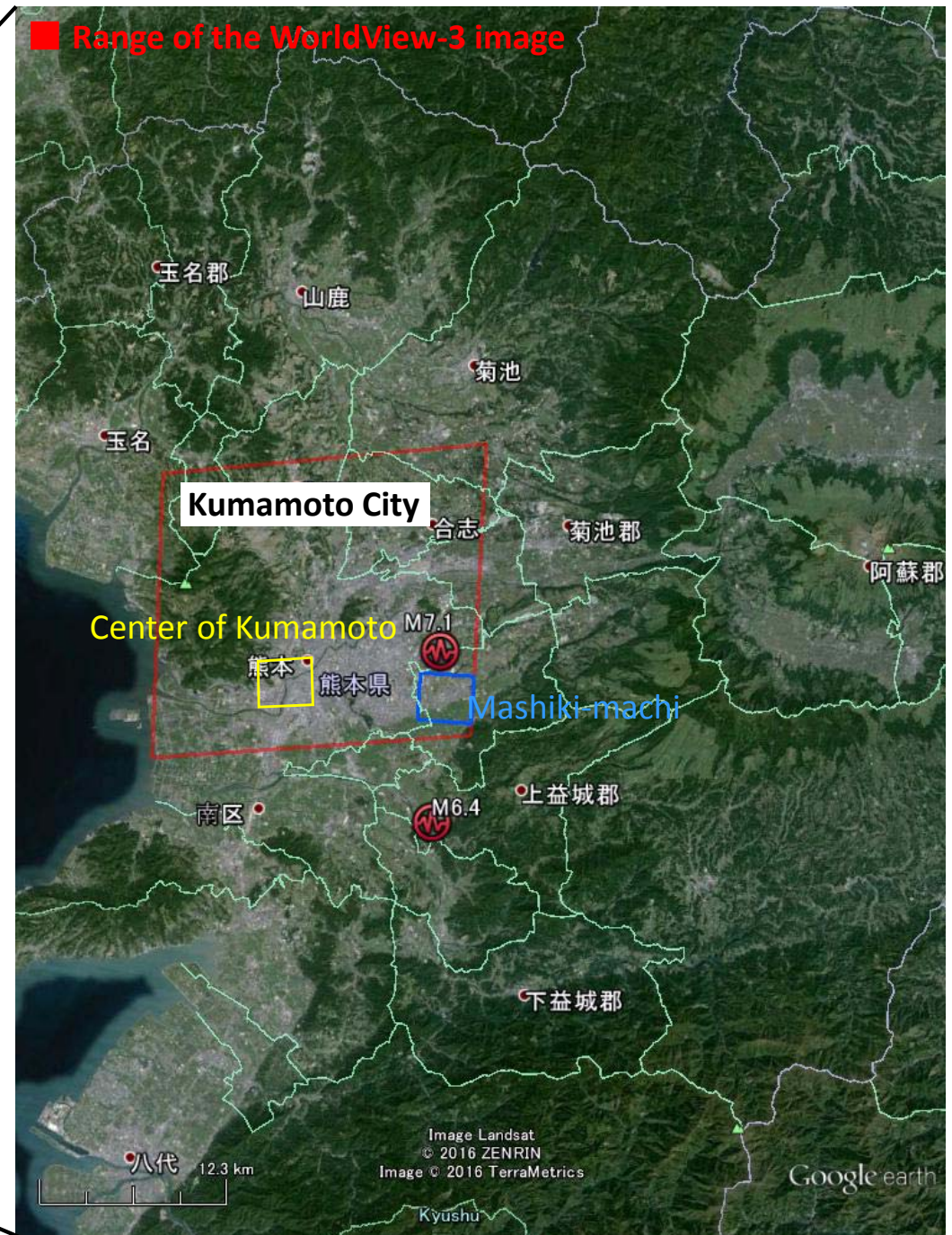
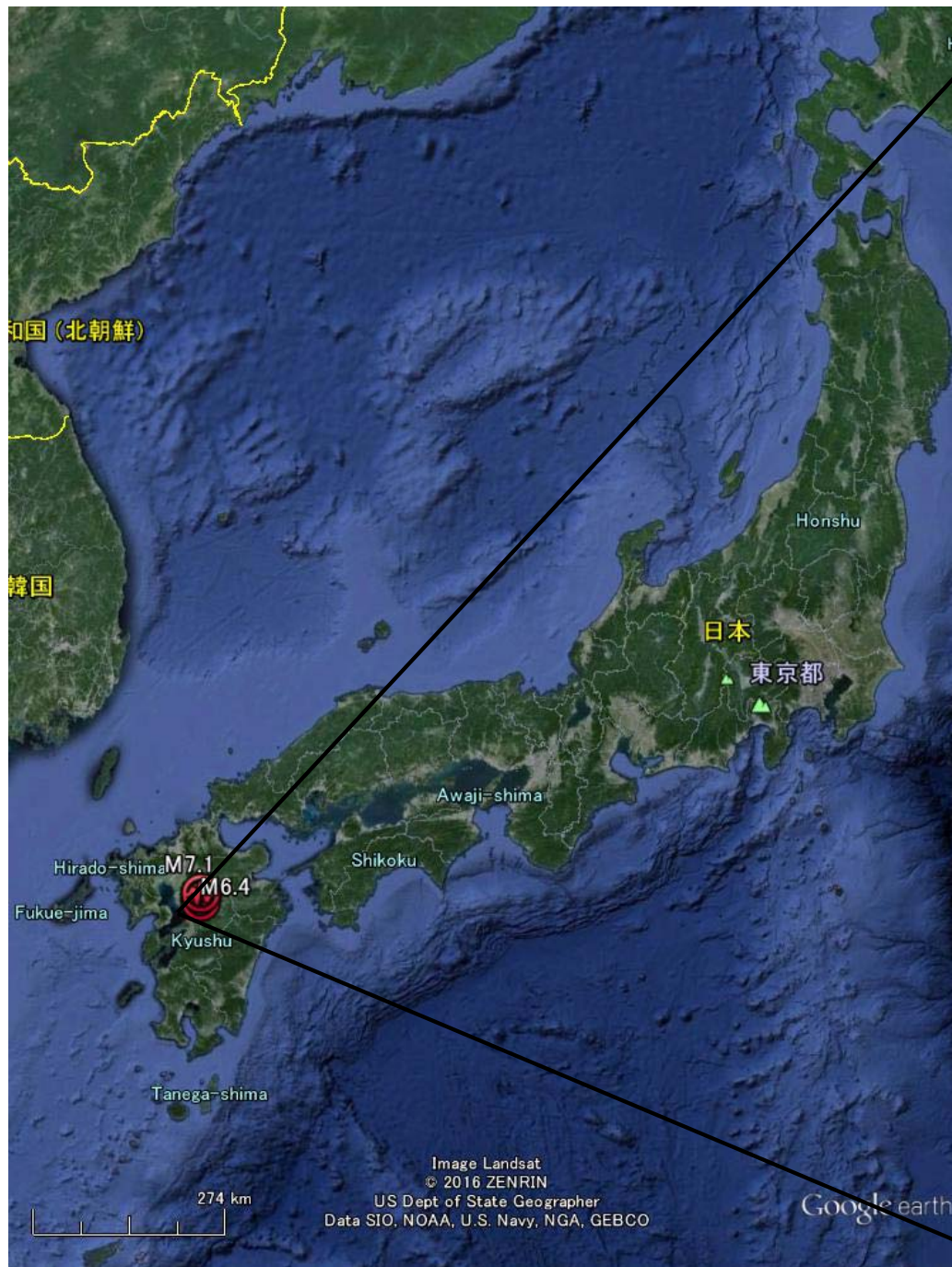
April 20, 2016

Wen LIU and Fumio Yamazaki

Chiba University

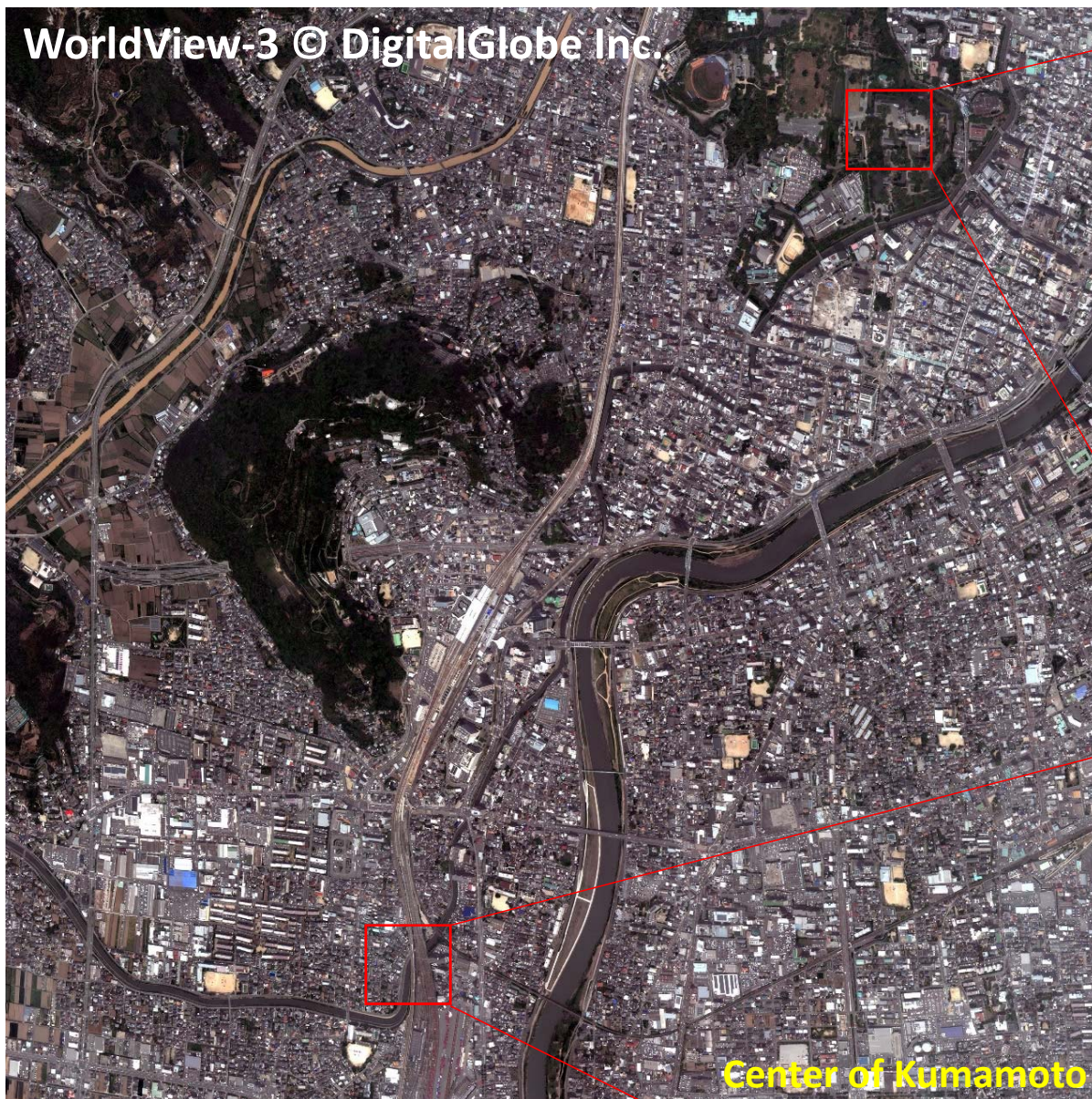








WorldView-3 © DigitalGlobe Inc.



Center of Kumamoto

Kumamoto castle



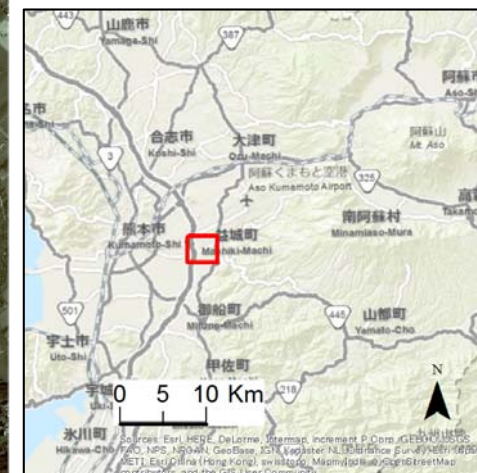
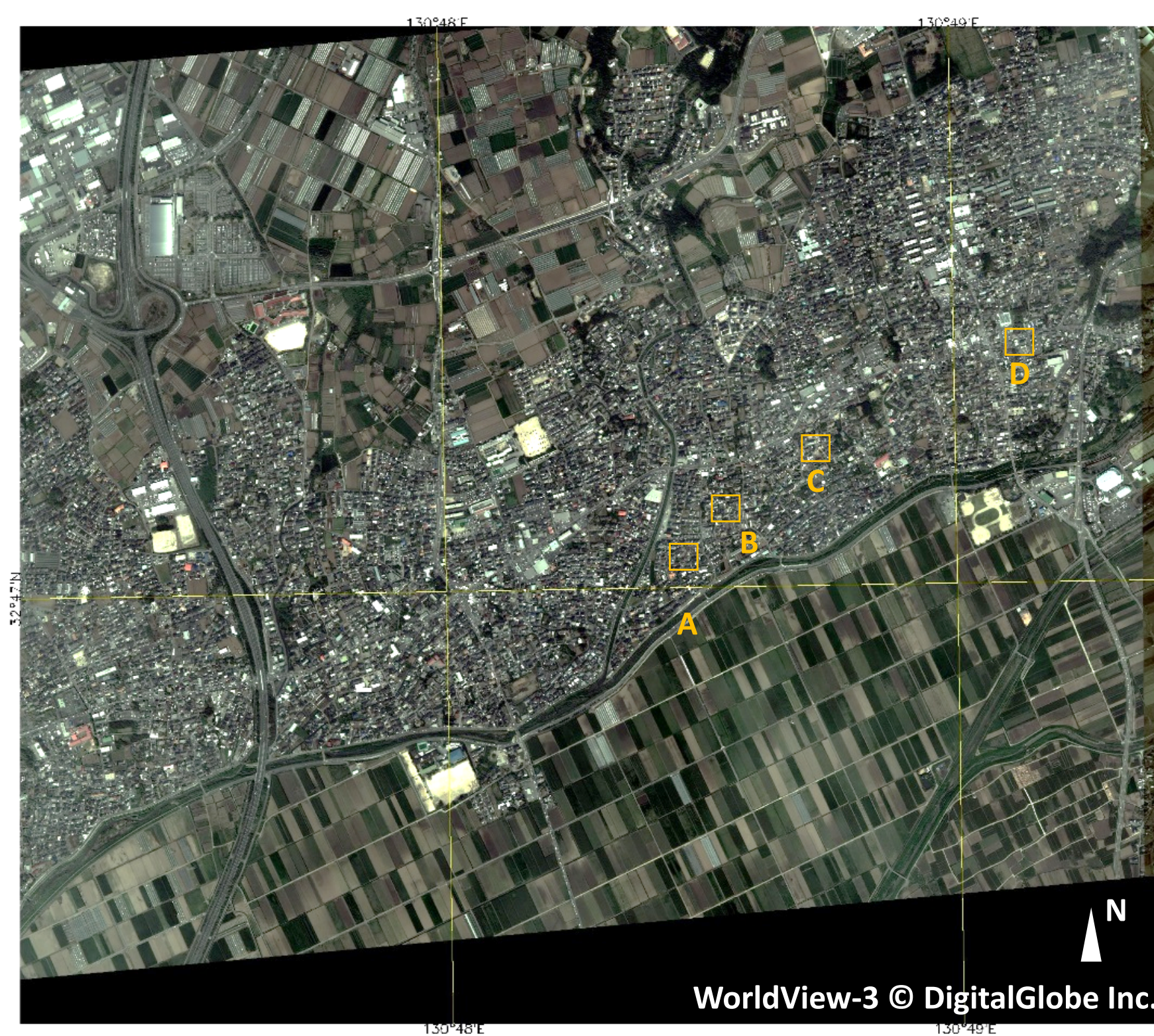
Derailed Shinkansen



Pansharpened WorldView-3 image  
2016/4/15T11:08:13 (JST)  
Resolution: 0.4-m







Pansharpened WorldView-3 image with 0.5-m resolution.

2016/4/15T11:08:13 (JST)

Mashiki-machi, Kumamoto, Japan.





## Damaged area A



### ■ Damaged buildings

Damaged buildings by the visual interpretation from the pansharpened pre- and post-event optical images.

Pre-event: WorldView-2

2013/05/26

11:42:00 (JST)

Post-event: WorldView-3

2016/4/15

11:08:13 (JST)

Resolution: 0.5-m

WV2 and WV3 images are owned by Digital Globe and provided by USGS.

## Damaged area B





## Damaged area C



### ■ Damaged buildings

Damaged buildings by the visual interpretation from the pansharpened pre- and post-event optical images.

Pre-event: WorldView-2

2013/05/26

11:42:00 (JST)

Post-event: WorldView-3

2016/4/15

11:08:13 (JST)

Resolution: 0.5-m

WV2 and WV3 images are owned by Digital Globe and provided by USGS.

## Damaged area D

