

**Supporting Information for**

Exploring the effects of landscape structure on Aerosol Optical Depth (AOD) patterns  
using GIS and HJ-1B images

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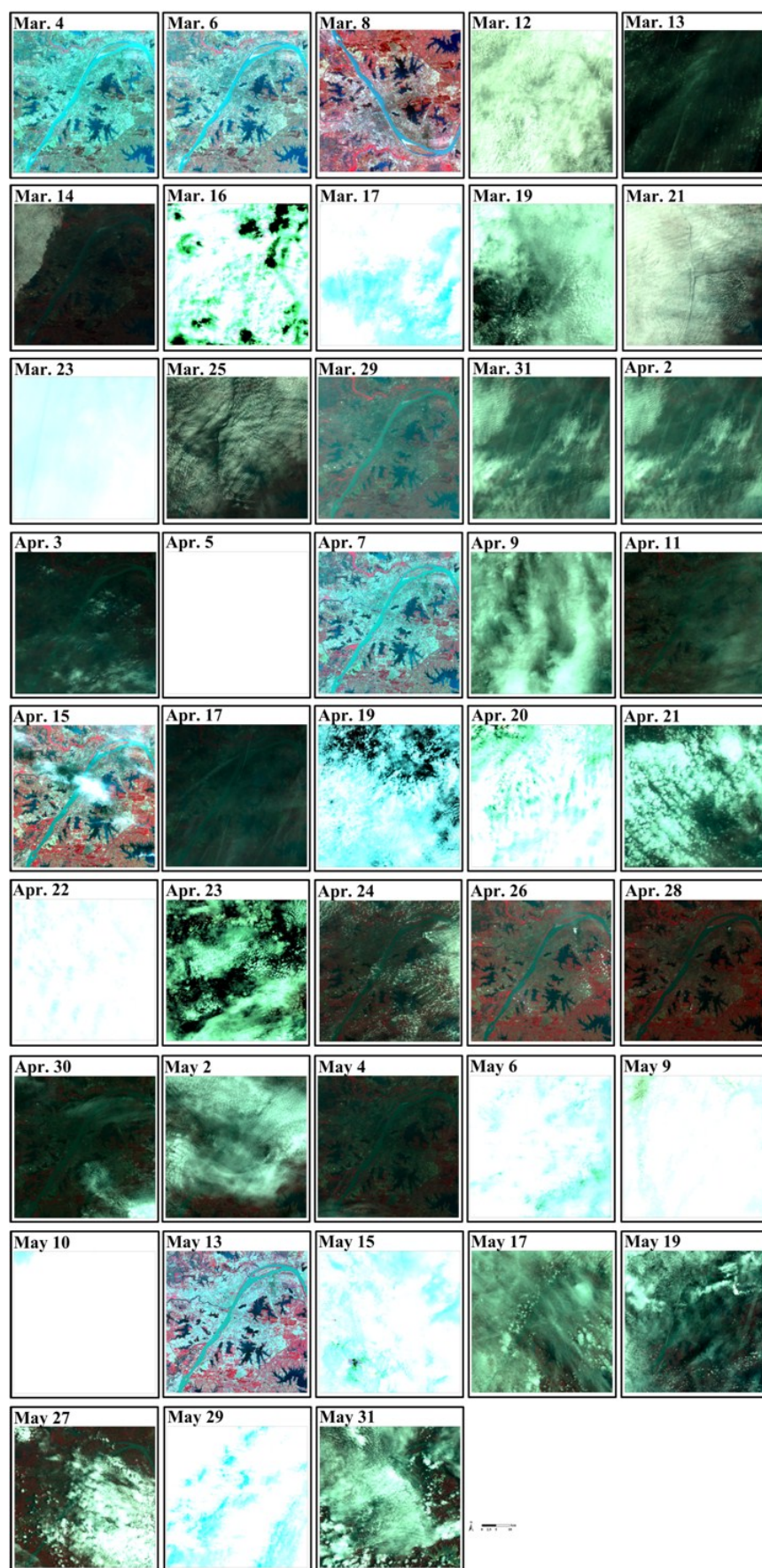
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## 17 **1. Additional Materials and Methods**

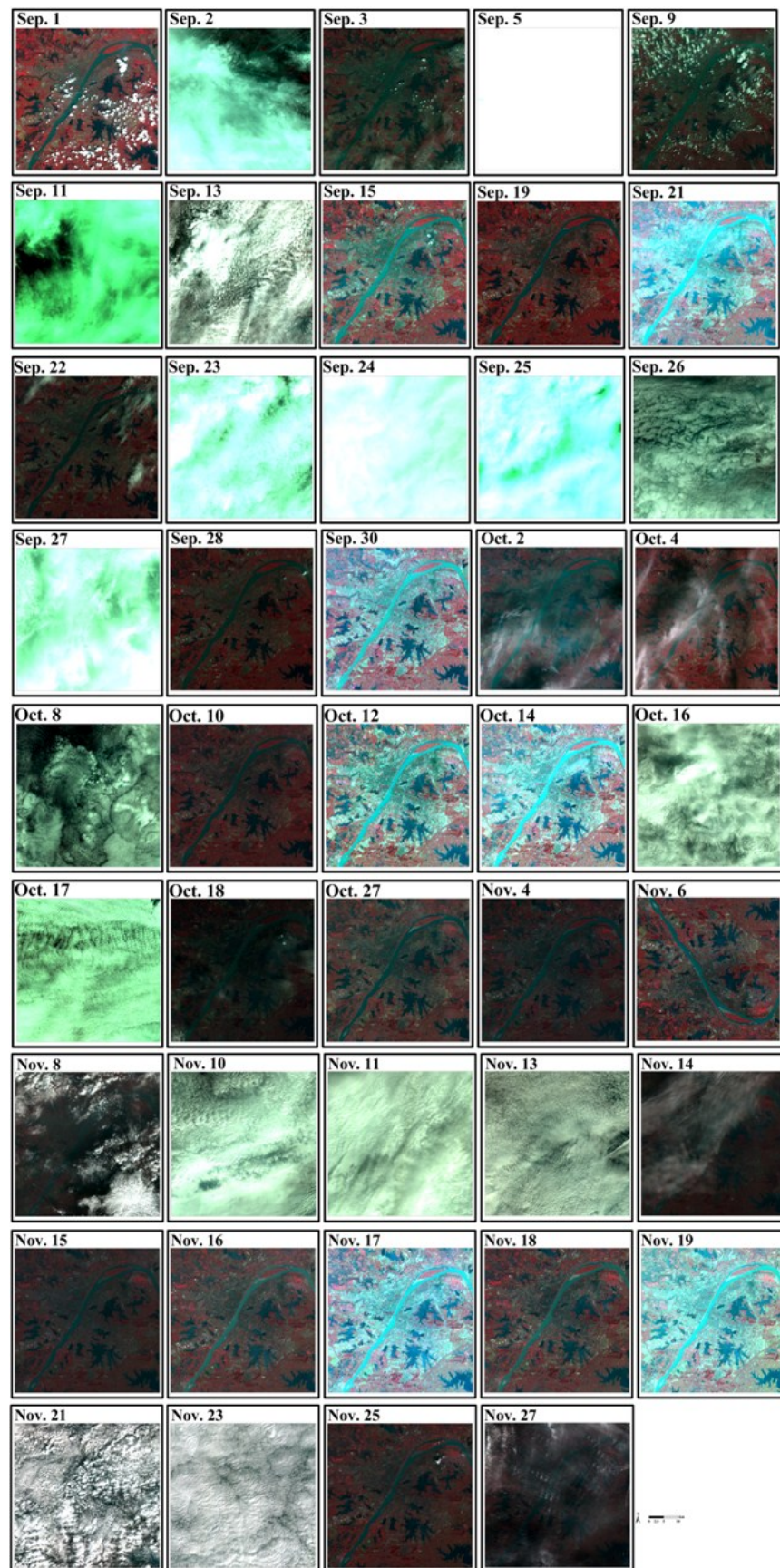
### 18 **1.1 The calculation of AODs in spring and autumn**

19       At first, we obtained all HJ-1A/B images during spring and autumn 2013 in  
20 central Wuhan. Those images were provided by the China Center for Resources  
21 Satellite Data and Application (CRESDA). The available data included forty-four HJ-  
22 1A/B images in spring (FigS. 1 and FigS. 3a) and forty-five in autumn (FigS. 2 and  
23 FigS. 3b). Combining analysis of FigS. 1, FigS. 2 and FigS. 3, we can obtain six  
24 cloud-free HJ-1A/B images (Mar. 8, 2013; Apr. 7, 2013, May 11, 2013; Sep. 19,  
25 2013; Oct. 12, 2013 and Nov. 25, 2013). Then, we retrieved AOD maps from those  
26 six images. The AODs in spring and autumn are represented by the mean AOD of all  
27 images in the corresponding season, respectively (Fig. 4). Besides, the information of  
28  $PM_{10}$  concentrations at monitoring station displayed that the air quality in central  
29 Wuhan is better in spring than in autumn (FigS. 4). In addition to the above  
30 mentioned factors, the retrieved AODs are matched for the  $PM_{10}$  monitoring data.

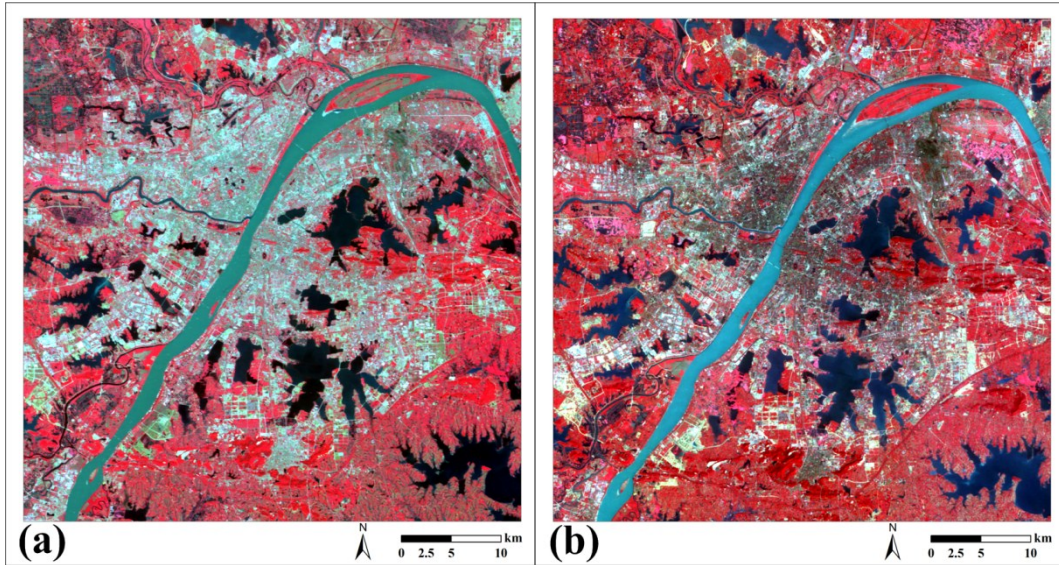


FigS. 1 The images of central Wuhan in spring 2013.

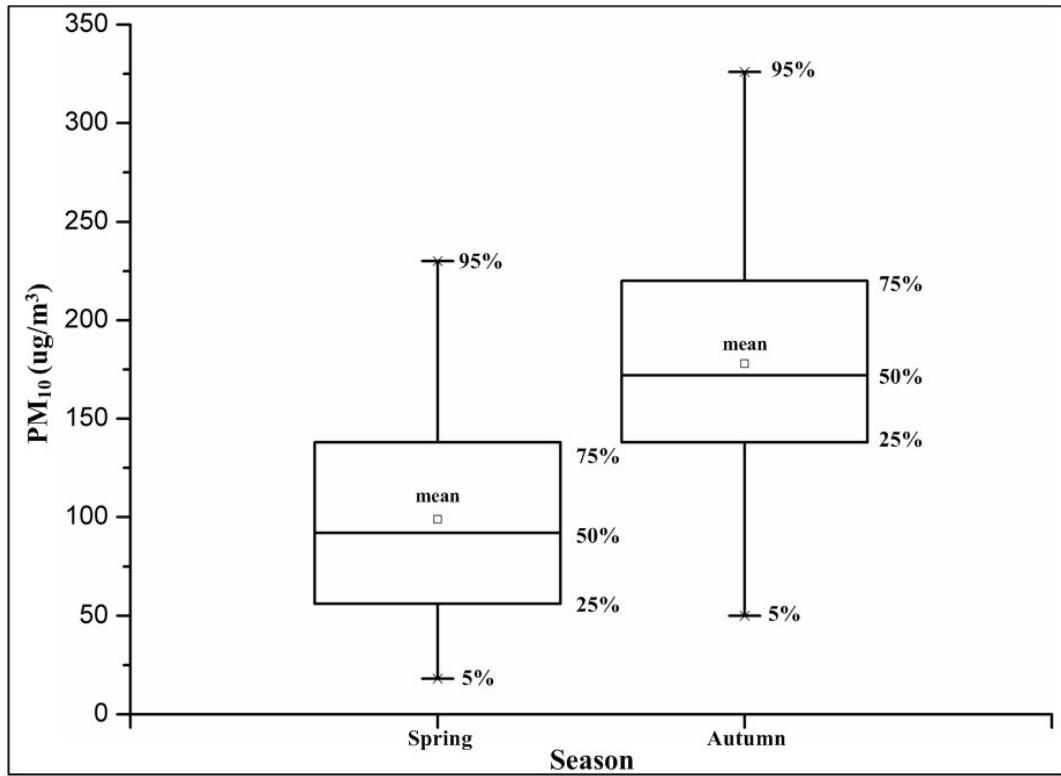




FigS. 2 The images of central Wuhan in autumn 2013.



FigS. 3 The images selected to obtain the land use maps: (a) May 11, 2013; (b) Oct.12, 2013.



FigS. 4 Box plot of PM<sub>10</sub> ( $\mu\text{g}/\text{m}^3$ ) concentrations at monitoring station.