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

Mar. 4	Mar. 6	Mar. 8	Mar. 12	Mar. 13
Mar. 14	Mar. 16	Mar. 17	Mar. 19	Mar. 21
Mar. 23	Mar. 25	Mar. 29	Mar. 31	Apr. 2
Apr. 3	Apr. 5	Apr. 7	Apr. 9	Apr. 11
Apr. 15	Apr. 17	Apr. 19	Apr. 20	Apr. 21
Apr. 22	Apr. 23	Apr. 24	Apr. 26	Apr. 28
Apr. 30	May 2	May 4	May 6	May 9
May 10	May 13	May 15	May 17	May 19
May 27	May 29	May 31	λ <del></del>	



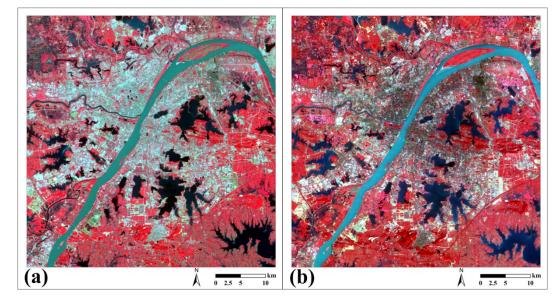
FigS. 1 The images of central Wuhan in spring 2013.

Sep. 1				Sep. 9
Sep. 11	Sep. 13	Sep. 15	Sep. 19	Sep. 21
Sep. 22	Sep. 23	Sep. 24	Sep. 25	Sep. 26
Sep. 27	Sep. 28	Sep. 30	Oct. 2	Oct. 4
Oct. 8	Oct. 10	Oct. 12	Oct. 14	Oct. 16
Oct. 17	Oct. 18	Oct. 27	Nov. 4	Nov. 6
Nov. 8	Nov. 10	Nov. 11	Nov. 13	Nov. 14
Nov. 15	Nov. 16	Nov. 17	Nov. 18	Nov. 19
Nov. 21	Nov. 23	Nov. 25	Nov. 27	λ





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)

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Oct.12, 2013.

