

Supplementary information: Additional figures and table

Beyond the connoisseurship approach: creating a chronology in Hokusai prints using non-invasive techniques and multivariate data analysis.

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Figure S1. Under the Wave off Kanagawa (Kanagawa oki nami ura), or The Great Wave, ca. 1830–32, 25.4 x 38.1 cm, The Metropolitan Museum of Art, The Howard Mansfield Collection, Purchase, Rogers Fund, 1936. Accession Number: JP2569



Figure S2. South Wind, Clear Sky (Gaifū kaisei), also known as Red Fuji, ca. 1830–32, 25.4 x 38.1 cm, The Metropolitan Museum of Art, The Howard Mansfield Collection, Purchase, Rogers Fund, 1936. Accession Number: JP2569



Figure S3. Storm below Mount Fuji (Sanka no haku u), ca. 1830–32, 24.8 x 37.5 cm, The Metropolitan Museum of Art, The Howard Mansfield Collection, Purchase, Rogers Fund, 1936. Accession Number: JP2567



Figure S4. Under the Mannen Bridge at Fukagawa (Fukagawa Mannenbashi shita), ca. 1830–32, 25.4 x 36.5 cm, The Metropolitan Museum of Art, Henry L. Phillips Collection, Bequest of Henry L. Phillips, 1939. Accession Number: JP2983



Figure S5. Surugadai in Edo (Tōto Sundai), ca. 1830–32, 24.8 x 37.5 cm, The Metropolitan Museum of Art, Henry L. Phillips Collection, Bequest of Henry L. Phillips, 1939. Accession Number: JP2995



Figure S6. Cushion Pine at Aoyama (Aoyama enza no matsu), ca. 1830–32, 25.4 x 38.1 cm, The Metropolitan Museum of Art, Rogers Fund, 1914. Accession Number: JP28



Figure S7. Senju in Musashi Province (Bushū Senju), ca. 1830–32, 24.6 x 36.5 cm, The Metropolitan Museum of Art, Rogers Fund, 1922. Accession Number: JP1289



Figure S8. Tama River in Musashi Province (Bushū Tamagawa), ca. 1830–32, 25.4 x 38.1 cm, The Metropolitan Museum of Art, The Howard Mansfield Collection, Purchase, Rogers Fund, 1936. Accession Number: JP2560



Figure S9. The Inume Pass in Kai Province (Kōshū Inume tōge), ca. 1830–32, 24.6 x 36.2 cm, The Metropolitan Museum of Art, Rogers Fund, 1922. Accession Number: JP1426



Figure S10. Fujimigahara in Owari Province (Bishū Fujimigahara), ca. 1830–32, 25.6 x 37.8 cm, The Metropolitan Museum of Art, Henry L. Phillips Collection, Bequest of Henry L. Phillips, 1939. Accession Number: JP2956



Figure S11. Hongo-ji at Asakusa in Edo (Tōtō Asakusa Hongo-ji), ca. 1830–32, 25.7 x 38.4 cm, The Metropolitan Museum of Art, Rogers Fund, 1922. Accession Number: JP1323



Figure S12. Tsukudajima in Musashi Province (Buyō Tsukudajima), ca. 1830–32, 25.4 x 38.7 cm, The Metropolitan Museum of Art, The Howard Mansfield Collection, Purchase, Rogers Fund, 1936. Accession Number: JP2563



Figure S13. Shichirigahama in Sagami Province (Sōshū Shichirigahama), ca. 1830–32, 25.7 x 38.1 cm, The Metropolitan Museum of Art, Rogers Fund, 1914. Accession Number: JP15



Figure S14. Umezawa Manor in Sagami Province (Sōshū Umezawa zai), ca. 1830–32, 25.7 x 38.4 cm, The Metropolitan Museum of Art, Rogers Fund, 1914. Accession Number: JP20



Figure S15. Kajikazawa in Kai Province (Kōshū Kajikazawa), ca. 1830–32, 25.4 x 38.4 cm, The Metropolitan Museum of Art, The Howard Mansfield Collection, Purchase, Rogers Fund, 1936. Accession Number: JP2581



Figure S16. Mishima Pass in Kai Province (Kōshū Mishima goe), ca. 1830–32, 24.4 x 37.8 cm, The Metropolitan Museum of Art, Henry L. Phillips Collection, Bequest of Henry L. Phillips, 1939. Accession Number: JP2970



Figure S17. Lake Suwa in Shinano Province (Shinshū Suwako), ca. 1830–32, 26 x 38.4 cm, The Metropolitan Museum of Art, Henry L. Phillips Collection, Bequest of Henry L. Phillips, 1939. Accession Number: JP2965



Figure S18. Ejiri in Suruga Province (Sunshū Ejiri), ca. 1830–32, 24.4 x 37.5 cm, The Metropolitan Museum of Art, The Howard Mansfield Collection, Purchase, Rogers Fund, 1936. Accession Number: JP2965



Figure S19. In the Mountains of Tōtomi Province (Tōtomi sanchū), ca. 1830–32, 24.4 x 37.9 cm, The Metropolitan Museum of Art, Rogers Fund, 1914. Accession Number: JP25

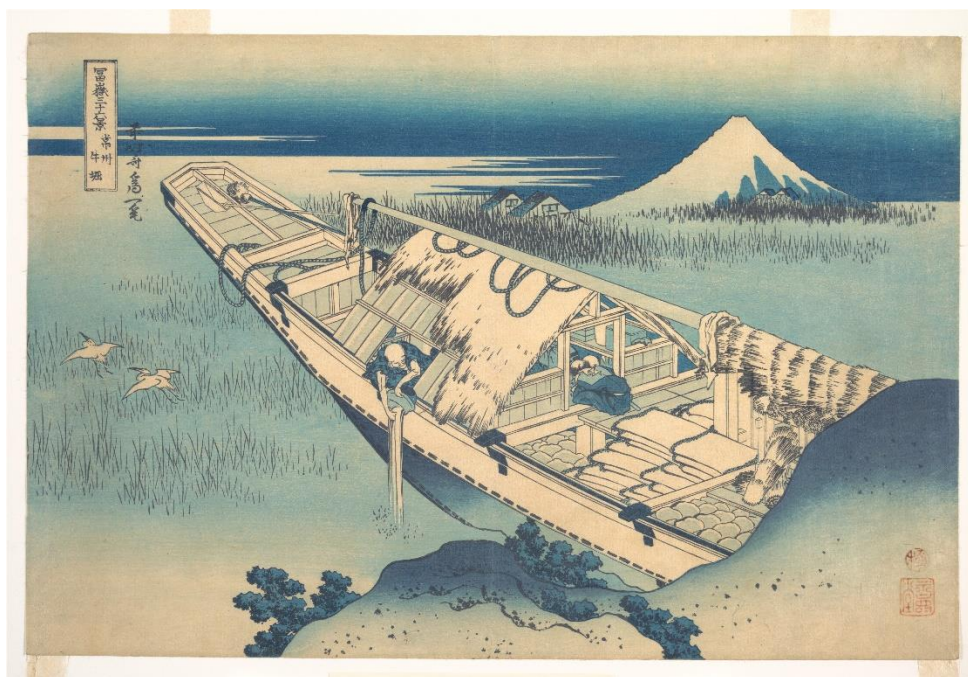


Figure S20. Ushibori in Hitachi Province (Jōshū Ushibori), ca. 1830–32, 25.4 x 38.1 cm, The Metropolitan Museum of Art, The Howard Mansfield Collection, Purchase, Rogers Fund, 1936. Accession Number: JP2565



Figure S21. Mitsui Shop at Surugachō in Edo (Edo Surugachō Mitsui mise ryaku zu), ca. 1830–32, 26 x 38.4 cm, The Metropolitan Museum of Art, Rogers Fund, 1922. Accession Number: JP1296



Figure S22. Viewing the Sunset over Ryōgoku Bridge from the Onmaya Embankment (Onmayagashi yori Ryōgokubashi sekiyō o miru), ca. 1830–32, 25.2 x 37.3 cm, The Metropolitan Museum of Art, Rogers Fund, 1922. Accession Number: JP1331



Figure S23. Sazai Hall at the Temple of the Five Hundred Arhats (Gohyaku Rakanji Sazaidō), ca. 1830–32, 26 x 38.7 cm, The Metropolitan Museum of Art, Henry L. Phillips Collection, Bequest of Henry L. Phillips, 1939. Accession Number: JP2984



Figure S24. Morning after the Snow at Koishikawa in Edo (Koishikawa yuki no ashita), ca. 1830–32, 25.7 x 38.3 cm, The Metropolitan Museum of Art, Rogers Fund, 1922. Accession Number: JP1330



Figure S25. Lower Meguro (Shimo Meguro), ca. 1830–32, 26 x 38.7 cm, The Metropolitan Museum of Art, Henry L. Phillips Collection, Bequest of Henry L. Phillips, 1939. Accession Number: JP2987



Figure S26. The Waterwheel at Onden (Onden no suisha), ca. 1830–32, 26 x 38.7 cm, The Metropolitan Museum of Art, Henry L. Phillips Collection, Bequest of Henry L. Phillips, 1939. Accession Number: JP2967



Figure S27. Enoshima in Sagami Province (Sōshū Enoshima), ca. 1830–32, 25.7 x 37.8 cm, The Metropolitan Museum of Art, Rogers Fund, 1914. Accession Number: JP22



Figure S28. Tago Bay near Ejiri on the Tōkaidō (Tōkaidō Ejiri Tago no ura ryaku zu), ca. 1830–32, 24.8 x 36.5 cm, The Metropolitan Museum of Art, Rogers Fund, 1922. Accession Number: JP1288



Figure S29. Yoshida on the Tōkaidō (Tōkaidō Yoshida), ca. 1830–32, 25.7 x 38.7 cm, The Metropolitan Museum of Art, Rogers Fund, 1922. Accession Number: JP1324



Figure S30. At Sea off Kazusa (Kazusa no kairo), ca. 1830–32, 25.1 x 38.3 cm, The Metropolitan Museum of Art, Rogers Fund, 1926. Accession Number: JP1482



Figure S31. Nihonbashi in Edo (Edo Nihonbashi), ca. 1830–32, 25.4 x 36.8 cm, The Metropolitan Museum of Art, Rogers Fund, 1936. Accession Number: JP1295



Figure S32. Sekiya Village on the Sumida River (Sumidagawa Sekiya no sato), ca. 1830–32, 25.4 x 38.7 cm, The Metropolitan Museum of Art, Rogers Fund, 1922. Accession Number: JP1338



Figure S33. Noboto Bay (Noboto no ura), ca. 1830–32, 24.8 x 36.5 cm, The Metropolitan Museum of Art, Henry L. Phillips Collection, Bequest of Henry L. Phillips, 1939. Accession Number: JP2958



Figure S34. The Lake at Hakone in Sagami Province (Sōshū Hakone kosui), ca. 1830–32, 25.7 x 38.1 cm, The Metropolitan Museum of Art, Rogers Fund, 1914. Accession Number: JP17



Figure S35. Reflection in Lake at Misaka in Kai Province (Kōshū Misaka suimen), ca. 1830–32, 24.9 x 37.0 cm, The Metropolitan Museum of Art, Rogers Fund, 1914. Accession Number: JP14



Figure S36. Hodogaya on the Tōkaidō (Tōkaidō Hodogaya), ca. 1830–32, 25.2 x 37.5 cm, The Metropolitan Museum of Art, Rogers Fund, 1922. Accession Number: JP1427

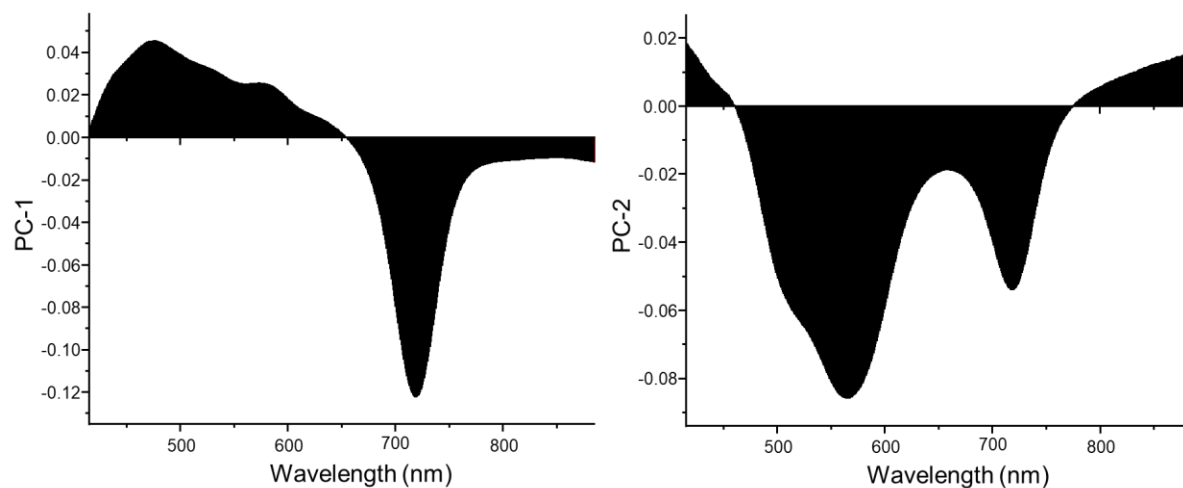


Fig. S37. PC-1 and PC-2 loadings plots associated with the PCA of the all-color dataset presented in Figure 2.

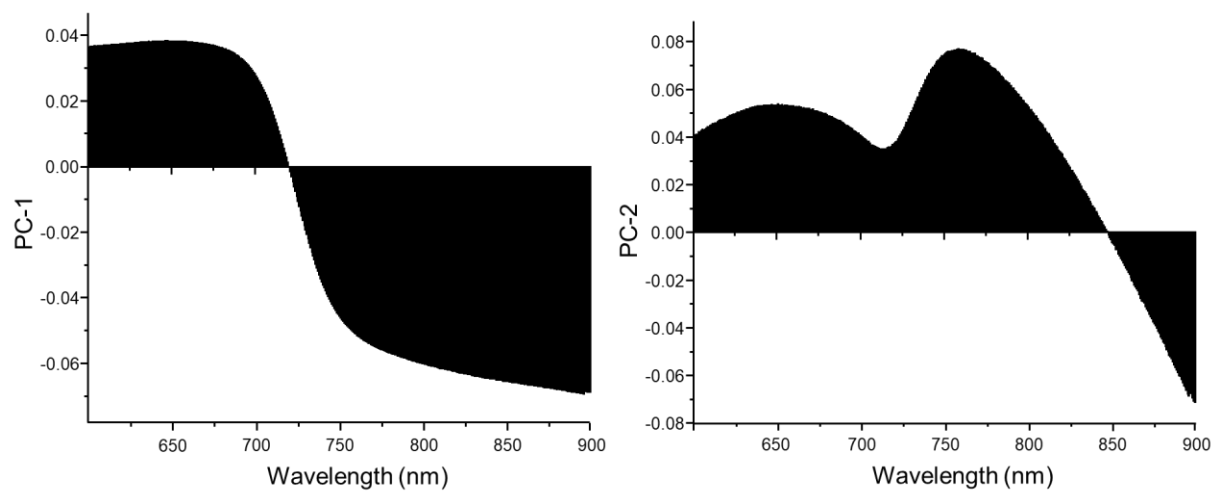


Fig. S38. PC-1 and PC-2 loadings plots associated with the PCA of the blue outlines dataset presented in Figure 3.

Accession #	Collection	Title	Color	Pigment identified													Cluster
				PB	I	IO	NO	AAS	L	V	RL	CB	SR	CY	T	NC	
JP2966	Metropolitan Museum of Art, NYC, NY, USA	In the Mountains of Tōtomi Provinc	Outlines	x	x												5
			Blue	x													
			Green	x		x											
			Dark highlights (green)	x	x	x											
JP2967	Metropolitan Museum of Art, NYC, NY, USA	The Waterwheel at Onden	Outlines	x	x												4
			Blue	x													
			Green	x		x	x										
			Yellow			x											
JP2968	Metropolitan Museum of Art, NYC, NY, USA	The Inume Pass in Kai Province	Outlines	x	x												9
JP2970	Metropolitan Museum of Art, NYC, NY, USA	Mishima Pass in Kai Province	Outlines	x	x												3
			Blue	x													
			Green	x		x	x										
			Dark highlights (green)	x	x	x	x										
			Dark highlights (blue)	x	x												
JP2972	Metropolitan Museum of Art, NYC, NY, USA	Under the Wave off Kanagawa, also known as The Great Wave	Outline	x	x												1
			Blue	x													
			Yellow 1											x			
			Yellow 2								x						
			Dark highlights (blue)	x	x												
JP2973	Metropolitan Museum of Art, NYC, NY, USA	Hodogaya on the Tōkaidō	Outlines	x	x												8
JP2974	Metropolitan Museum of Art, NYC, NY, USA	Yoshida on the Tōkaidō	Outlines	x	x												9
			Blue	o													
			Green	x		x											
			Red							x							

