Supplementary Materials

Single Images

1024x768-pixel resolution, RGB-palette, TIFF-format images of the computer reconstruction of *Ancyromonas*, from various aspects, with and without various components rendered (see key below). Some of these are replicates of images in Figs. 8 and 9 in the main text. Colours are as for Figs. 8 and 9 in the main text. Key to visibility: [M]: plasma membrane and vesicle; [N]: nucleus and mitochondrion; [P]: peripheral microtubule systems X, Y, and Z.

Filename	Visibility			Orientation	Direction	Replicates
M-AF-BtT.tif	M		P	Anterior flagellum	Base to tip	
M-AF-TtB.tif	M	N	P	Anterior flagellum	Tip to base	Fig. 8C
M-AP-back.tif	M		P	Anteroposterior axis	Posterior to cell	
M-AP-frnt.tif	M	N	P	Anteroposterior axis	Anterior to cell	Fig. 8D
M-DV-btm.tif	M	N	P	Dorsoventral axis	Ventral to cell	Fig. 8B
M-DV-top.tif	M	N	P	Dorsoventral axis	Dorsal to cell	Fig. 8A
M-PF-BtT.tif	M		P	Posterior flagellum	Base to tip	
M-PF-TtB.tif	M	N	P	Posterior flagellum	Tip to base	
N-AF-BtT.tif			P	Anterior flagellum	Base to tip	
N-AF-TtB.tif			P	Anterior flagellum	Tip to base	
N-AP-back.tif			P	Anteroposterior axis	Posterior to cell	
N-AP-frnt.tif			P	Anteroposterior axis	Anterior to cell	
N-crscnt.tif				Crescent structure	Tip to base	Fig. 9B
N-DV-btm.tif			P	Dorsoventral axis	Ventral to cell	Fig. 9A
N-DV-top.tif			P	Dorsoventral axis	Dorsal to cell	
N-ovrhd-9C.tif				Dorsal, slightly posterior to middle of cell		Fig. 9C
N-ovrhd-XYZ.tif			P	Dorsal, slightly posterior to middle of cell		
N-PF-BtT.tif			P	Posterior flagellum	Base to tip	
N-PF-TtB.tif			P	Posterior flagellum	Tip to base	

Stereograms

Stereo pairs of renderings of the computer model of *Ancyromonas*, displaced 15% of the width of the image. Two pairs of images are in each file, arranged above and below the two white dots. In most, the upper pair of images are of the same aspect of the model as the lower pair, except that in the lower pair all membranous structures have been removed. Colours are as for Figs. 8 and 9 in the main text. All viewing angles are based upon the single images.

Filename	Orientation	Direction	Comp. single images
stereoAF-BtT.tif	Anterior flagellum	Base to tip	M-AF-BtT, N-AF-BtT
stereoAF-TtB.tif	Anterior flagellum	Tip to base	M-AF-TtB, N-AF-TtB
stereoAP-back.tif	Anteroposterior axis	Posterior to cell	M-AP-back, N-AP-back
stereoAP-frnt.tif	Anteroposterior axis	Anterior to cell	M-AP-frnt, N-AP-frnt
stereoDV-btm.tif	Dorsoventral axis	Ventral to cell	M-DV-btm, N-DV-btm
stereoDV-top.tif	Dorsoventral axis	Dorsal to cell	M-DV-top, N-DV-top
stereoPF-BtT.tif	Posterior flagellum	Base to tip	M-PF-BtT, N-PF-BtT
stereoPF-TtB.tif	Posterior flagellum	Tip to base	M-PF-TtB, N-PF-TtB
stereo9BC.tif	Dorsal, slightly posterior to middle of cell		N-ovrhd-XYZ
	Crescent structure	Tip to base	N-crscnt

To view, look between the dots, then cross your eyes until the two dots overlap. Relax your focus until the dots have clear, sharp boundaries, while not separating. Then look up or down at the now-overlapping images to obtain a three-dimensional perspective on the model.

Anaglyphs

Black-and-white images of the computer model of *Ancyromonas*, otherwise identical to those used for the stereograms, set to complementary colours and superimposed. Four to six images are in each file. Anaglyph files correspond to the above single-image files as follows (listed: top left, top right; bottom left, bottom right):

anaAF.tif: M-AF-TtB, M-AF-BtT; N-AF-TtB, N-AF-BtT

anaAP&9BC.tif: M-AP-frnt, M-AP-back; N-AP-frnt, N-AP-back; N-crscnt, N-ovrhd-XYZ

anaDV.tif: M-DV-btm, M-DV-top; N-DV-btm, N-DV-top

anaPF.tif: M-PF-TtB, M-PF-BtT; N-PF-TtB, N-PF-BtT

These images can be viewed with standard red-green glasses (red in the right eye).

Movies

640x480-pixel resolution, compressed-QuickTime-format movies of the computer model of *Ancyromonas* rotating about different axes. Colours are as for Figs. 8 and 9 in the main text.

AP1.mov: Rotation about the cell's anteroposterior axis, showing only the microtubular components and their accessories (as in Fig. 9)

AP2.mov: Rotation about the cell's anteroposterior axis, showing the microtubular components and their accessories plus the single-membrane components (the vesicle parallel to the posterior flagellum and the plasma membrane).

AP3.mov: Rotation about the cell's anteroposterior axis, showing all modeled components (as in Fig. 8).

DV1.mov: Rotation about the cell's dorsoventral axis, showing only the microtubular components and their accessories (as in Fig. 9).

DV2.mov: Rotation about the cell's dorsoventral axis, showing the microtubular components and their accessories plus the single-membrane components (the vesicle parallel to the posterior flagellum and the plasma membrane).

DV3.mov: Rotation about the cell's dorsoventral axis, showing all modeled components (as in Fig. 8).

RL1.mov: Rotation about the cell's left-right axis (tumbling towards the viewer), showing only the microtubular components and their accessories (as in Fig. 9).

RL3.mov: Rotation about the cell's left-right axis (tumbling towards the viewer), showing all modeled components (as in Fig. 8).