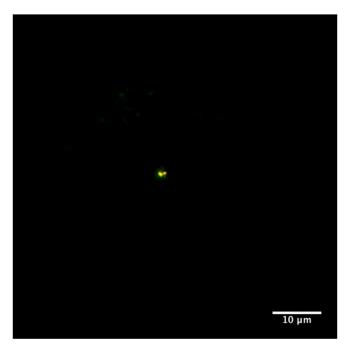
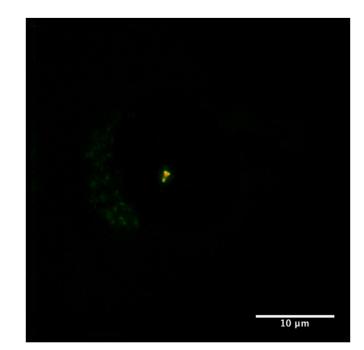
# **Supporting Information**

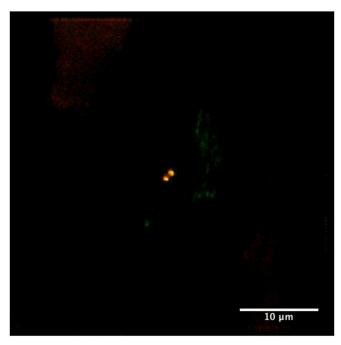
Vlijm et al. 10.1073/pnas.1716840115



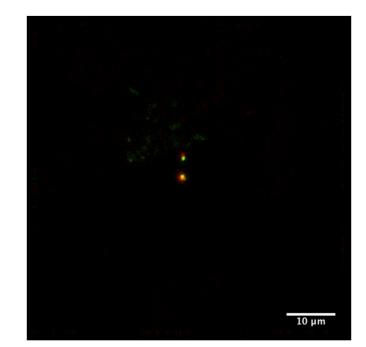
**Movie 51.** Centrosome movement in RPE1 cells. The two centrosomes of an interphase cell are kept together in a dynamic way (representative for ~95% of the cells). mNeonGreen-CEP68 is shown in green; mRuby2-PACT is shown in red and serves as centrosome marker.



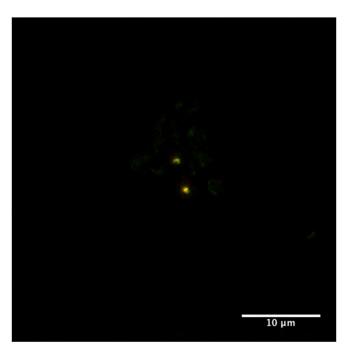
Movie S2. Centrosome movement in RPE1 cells, similar to Movie S1. The two centrosomes of an interphase cell are kept together in a dynamic way (representative for ~95% of the cells). mNeonGreen-CEP68 is shown in green; mRuby2-PACT is shown in red and serves as centrosome marker.



Movie S3. Centrosome movement in RPE1 cells, similar to Movies S1 and S2. The two centrosomes of an interphase cell are kept together in a dynamic way (representative for ~95% of the cells). mNeonGreen-CEP68 is shown in green; mRuby2-PACT is shown in red and serves as centrosome marker.



**Movie 54.** Centrosome movement in RPE1 cells. The separated centrosomes of a cell in interphase are joined and stay together thereafter (representative for ~5% of the cells). mNeonGreen-CEP68 is shown in green; mRuby2-PACT is shown in red and serves as centrosome marker.

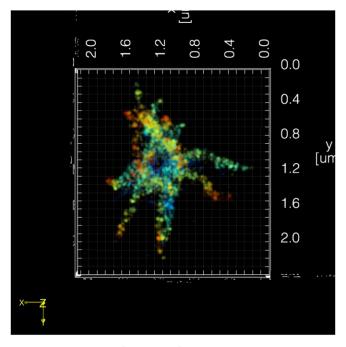


**Movie S5.** Centrosome movement in RPE1 cells, similar to Movie S4. The separated centrosomes of a cell in interphase are joined and stay together thereafter (representative for ~5% of the cells). mNeonGreen-CEP68 is in green; mRuby2-PACT is shown in red and serves as centrosome marker.

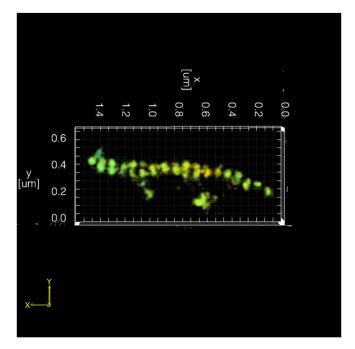




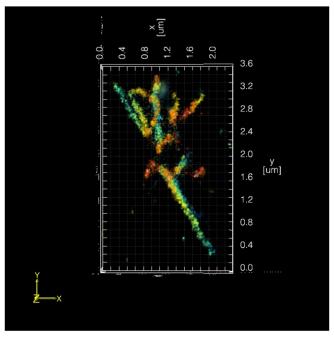
**Movie S6.** Centrosome movement in RPE1 cells, similar to Movies S4 and S5. The separated centrosomes of a cell in interphase are joined and stay together thereafter (representative for ~5% of the cells). mNeonGreen-CEP68 is shown in green; mRuby2-PACT is shown in red and serves as centrosome marker.



 $\textbf{Movie S7.} \quad \text{A 3D image of a rootletin fiber network imaged by 3D-STORM}.$ 



Movie S8. A 3D image of a single rootletin fiber imaged by 3D-STORM.



Movie S9. A 3D image of a CEP68 fiber network imaged by 3D-STORM.

## Movie S9

# **Other Supporting Information Files**

SI Appendix (PDF) Dataset S1 (PDF)